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Contents

- 6** **Radar**
Stay of Eye
- 21** **Interview**
Prof. José Clênio Ferreira de Oliveira
- 24** **Point of View**
Strengthen to do not Recede!
- 30** **Cover**
In Climate of Health
- 47** **Memory**
The Pioneer of Medical Climatology in Brazil
- 57** **Curiosities**
Ultraviolet Radiation Index and Health: You owe Protect!
- 60** **Reflection**
Marcomedede Rangel: A Silence in the Astronomical and Meteorological promotion in Brazil



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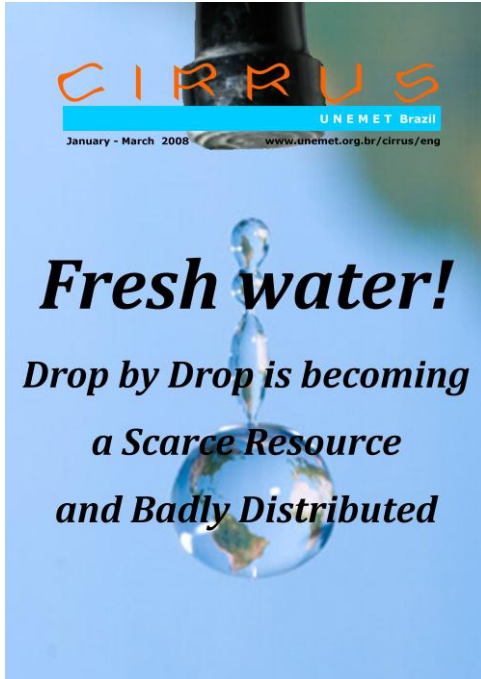
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EMOTION BY THE HOMAGE TO MY FATHER

Dear colleagues of UNEMET, I would like to tell that I got very touched to see the rendered homage to my father, Florivan Pugliesi, in UNEMET Site. I accompanied many of his fights and there is some time have role conscience that he had in my formation, ideas that he had regarding the society and to the science, ideas that were highlighted in the text in his homage. I will get very glad if the space SBPC-Alagoas carry his name, happy and honorable, and would like put me available for anything that was related to honor the professional history of fights of my father. If needed anything, come in in contact, please. I am sure that if he was alive perhaps I knew the UNEMET team in Alagoas. Unfortunately that was not possible, but cause emotion me know that is not alone in me and in my family who he lets yearnings. Best regards and my thanks, in my name and of my family.

Felipe Cabañas da Silva
Son of Dr. Florivan Pugliesi da Silva,
São José dos Campos, SP, Brazil.

Dear Felipe, we are happy with your message expressing that our homages touched you. Actually your father always remained striving in behalf of the science and of his homeland. As all his friends are doing now and will continue to do so that his legacy of fighter continues alive. Our homage was simple and besides the Site also will leave a matter about his life and fight in the Magazine Cirrus, published by UNEMET. So much that we postpone its divulging to put a homage and that would not owe by any means pass in white, because his father strove until the end so that the science was published and accomplished indeed, mostly in Meteorology and in the Space Area. For all this, we believe that his legacy will continue to be craved and our homage certainly is a form of registering to all his fight and that it remains lives. We thank enormously your words and certainly you soon will find with us. When the magazine Cirrus goes published are going to send a copy for you.

LIBRARY OF INMET

Dear friends of UNEMET, I would like to get information on subscription of magazine Cirrus. Is it free? In case affirmative, how to proceed to we receive the old and posterior issues for the Meteorology National Library collection of INMET?

Márcia Cristina Tomaz de Aquino
INMET Bibliothecary, Brasília, DF, Brazil.

Dear Márcia, we thank INMET's Interest, larger agency of the Brazilian Meteorology, in the Magazine Cirrus. About you inquiry, we inform that Cirrus is an UNEMET's Publication, non-profit-making institution, where it owns few resources for its legal actions. Moreover, our publications are free, because we have as goal announce to everybody, independent of instruction level, everything on Meteorology and similar areas, where consequently do not do subscription. Therefore, in this project phase, we opt by the focus at the online edition. The printed version owns a very limited circulation, which is sent to



some of our partners. If you have interest we can send you in digital media all our issues.

CONGRATULATIONS BY COVER MATTER AND MAGAZINE

Hello everybody. I thanked by sent of Cirrus and of cover matter "The Wastefulness and the Scarcity of Water!" of the Magazine Cirrus! I seize to congratulate the Matter and the Magazine!

Helane Carine de Araújo Oliveira
UFAL, Maceió, AL, Brazil.

✉ Hi Helane Araújo, we of the UNEMET thank you message and by congratulations on Cover Matter and by Magazine Cirrus. Once again we would thank you message and to tell that our work to continue, your opinion is fundamental, guiding us so much in our presentation form, regarding access or difficulties problems in information, in addition to which you can send agenda and paper suggestions that will be able to be published in it.

METEOROLOGY DOUBTS

Dear UNEMET friends, my name is Edson Ferreira, have 17 years old. Yet I entered in touch with you previously, but I would like to take more some doubts on Meteorology. I would like to know how is day by day of a meteorologist; if is easy to find employ for a meteorologist and also there are many vacancies for this career in Brazil; If graduate me in Meteorology, I will be able to act in other countries, for example, United States. I will be thankful if can take my doubts.

Edson Ferreira Barbosa
Lajedo, Pernambuco, Brazil.

✉ Hey Edson, once again we get very happy in receive you message. The day by day of a meteorologist depends of which area the professional is acting. Usually the meteorologists can act in 4 sectors: Teaching, Research, Operational and Administrative. For example, the meteorologist who acts in the weather prognosis and climate forecast area is very run and depending on the working location, usually it's 6 o'clock daily in a scale system, including weekend. For who wants to be researcher, the field has good advantages: There is possibility to study at all world in themes as climate changes and atmosphere phenomena. Moreover, the

researches field is very vast. Today to arrange employ the easiest way is to have master and doctorate, because there are several companies, public and private, that are contracting to actuate so much at environmental area, as well as to make report technical of natural disasters, like strong winds, thunderstorms, floods etc. About if exist many vacancies for the career, we inform that nowadays there is a lot of lack of these professionals, so much that in a search done by UNEMET showed that exists that no professional was unemployed. In addition to which in Brazil the courses quantity is very small, while the demand increases every day. If you if graduate at Brazil in Meteorology can yes act in other countries, so much how various people are already working in the USA, Europe and Asia.

GOOD READINGS OF MAGAZINE

Dear friends I want to send greetings by good readings that I have been doing of the magazine Cirrus. For who like weather exist many difficulties how to interpret the charts or satellite images. This way, my suggestion would be because do not create a link that carries to easily understandable and practical resources. For example, in English there are more resources, however as science idea defender in Iberian languages, I defend that Brazil like giant in this area has a "responsibility" that never can be forgetful with the scratch of get poorer. Fortunately the progress has been being great (increased 12 places in C&T international index) and I judge that still is going to accelerate due to the effect multiplier of labor tasks like the one of you.

Antônio Santos Cristovão
Alcabideche, Portugal.

✉ Hello Antônio Cristovão, firstly we would like to thank by your message and by greetings on magazine. We also thank by the optimum supplied suggestion that will be carried for Cirrus editorial council and we believe that should be respected and afterwards implemented.

NOTE

All messages sent readily had been answered. We are thankful everybody which collaborate with suggestions and critical by to improve of the Cirrus.

OS EDITORES

WHAT METEOROLOGY DOES IT HAVE EXIST WITH HEALTH?



Health left of being exclusively a medicine subject. Chosen as priority theme in the opinion researches, people's health, among them the respiratory diseases, also is, today, a challenge for the scientists who integrate Biometeorology's Area, specialization of the meteorological science that studies this matter and that needs to be developed most in our country to give answers the our society. This way, the **Cover Matter** of this issue treat of this important subject, relating information and clearings on influence of the meteorological conditions in the human health and its importance in our everyday.

Biometeorology theme also is approached in our **Interview** with the professor of Atmospheric Sciences Institute, José Clênio de Oliveira, specialist in this area. In it, the professor to look for analyzes not only the causes of the current moment of Biometeorology as well as aspects that should be announced so that people can take science and futurely enlarge the quantity of researchers studying this important specialization of the meteorological science.

Do you know how is calculated and so that it serves the ultraviolet radiation index? Our session **Curiosities** point out for you.

The Meteorology always was seen as a career that owns relationships with other activities, however its community always was small for several reasons: Small number of schools, risen evasion and few incentives of public and private institutions that could encourage the students with apprenticeships and offered jobs to the graduated professionals. Moreover, missed by its society strive and to strengthen of manner more intense in behalf of its subscript rights in Law, besides updating its functions flagrantly due to the changes occurred along time, what did not occur! Passed 30 years of the Professional Regulation Law in Brazil we continue still striving so that our rights be respected and asking what

should do, in a perspective of short, medium and long terms, to face these problems. This is the motive of our **Point of View**, that seek analyze the Lay Project that wants to change the profession name and that according to its authors would solve the existing problems

Following the way to **Our Schools**, you are going to know the Meteorology School recent history of the Federal University of Santa Maria (UFSM). In it we show the School advances after its creation that for signal owns nowadays one of the courses most competed in Brazil. Moreover, it culminated recently with creation of its Post-Graduation even just having 6 years of creation.

Finally, Cirrus could not to mention registering the loss of one of the largest divulging scientific names of Brazilian meteorology: The physicist and painter Marcomede Rangel. With more than 30 published papers, Marcomede loved to talk with children on sciences, among them Meteorology and Astronomy. He was a symbol than best Brazil already produced in the scientific field in Astronomy and correlated sciences. His death lets an enormous lacuna between all the ones that, like he, fight to announce without obstacles sciences to all people, of simple form and without tecnicism. Because of this, UNEMET does this just homage to the Marcomedia!

Stay of Eye!

VACANCIES FOR METEOROLOGY IN UFRN



Federal University OF Rio Grande do Norte (UFRN) opened public concourse for fulfilling of 79 vacancies by professor effective position.

At whole are four vacancies by professor adjunctive position (40 hours with Exclusive Dedication) which meteorologist can compete in the next areas:

- 1) Oceanography physical,
- 2) Climate modeling,
- 3) Interaction ocean-atmosphere, and
- 4) Remote sensing.

The first is to work on Geophysics Department and other three at Sciences and Technology School, both in the Campus on Natal city.

The deadline goes from 20 September to to 22 October 2010. The registrations rate value belongs to R\$220.00. The salary remuneration is R\$7,333.67.

To see the edictal and other information on referred concourse can be obtained in the website: http://www.prh.ufrn.br/Legislacao_2009/Edital_023_Efetivo_2010_retificado.pdf.

Source: Marcos Vianna, CHM/M. Navy Brazil.

CONCOURSE FOR ADJUNCTIVE PROFESSOR IN METEOROLOGY AND CLIMATOLOGY IN UFRRJ



The Environmental Sciences Department of Forests Institute of the Rural Federal University of Rio de Janeiro (UFRRJ) opened Public Concourse of Tests and Titles for fulfilling of a place in the Mastership Superior Career, at Meteorology and Climatology area.

The working location is in the Seropédica city/Rio de Janeiro, submitted to the working regime 40 hour with Exclusive Dedication and the salary is R\$6,722.85.

The basic requisites demanded for registration is that the candidate owns Graduation in Meteorology, Forest Engineering, Agronomy, Agricultural and Environmental Engineering or Environmental Engineering, with Doctorate in Meteorology, Atmospheric Sciences, Agrometeorology, Agricultural Meteorology or Physics of the Agricultural Environment.

The stages that should consist are:

- a) Test writing and/or practice (eliminating);
- b) Didactic test (eliminating);
- c) Test of titles (classificatory);
- d) Working plane (classificatory).

The registrations will be opened from 04 October to 03 November, 2010 and only will be able to exclusively via Internet through website www.ufrrj.br/concursos. The registration rate value is of R\$169.99.

Other information can be gotten through http://www.ufrrj.br/concursos/edital44_2010.pdf.

Source: UFRRJ.

VACANCY FOR METEOROLOGIST IN UFRGS



Federal University of Rio Grande do Sul (FAURGS) opened public concourse for fulfilling vacancies of personal technician-administrative of superior and median level, through Concourse Public Edictal N. 28/2010 - HAS - PROGESP/UFRGS.

The Concourse will be accomplished under technical coordination of the Federal University of Rio Grande do Sul (UFRGS) and executed by Support Foundation from Rio Grande do Sul of UFRGS (FAURGS).

There is place for meteorologist post to work in Porto Alegre/RS.

The function is to accomplish investigations on terrestrial atmosphere constitution and properties and forces that modify, to increase the scientific knowledge and to study its applications practices. The initial Salary is R\$2,989.22.

The inscription will go from 28 September to 22 October, 2010, where alone can done exclusively via Internet through link www.faurgsconcursos.ufrgs.br.

The objective tests will be held in 28 November, 2010. The registration rate value is R\$74.00.

Further information should be obtained in: <http://www.faurgs.ufrgs.br/concursos/ECP2810/ECPEdital2810.asp> or <http://www.faurgs.ufrgs.br/concursos/ECP2810/EDITAL-28.pdf> (Edictal).

Source: Marcos Vianna, CHM/M. Navy Brazil.

SYNOPTIC METEOROLOGY COURSE



Synoptic Meteorology is atmosphere study area, where enabled professional puts in practice every its theoretical knowledge acquired along its formation.

Due to its importance the Forecast Weather and Climate Studies Center of the National Institute of Space Research (CPTEC/INPE) will be accomplishing in the period from 18 to 20 October, 2010 the Synoptic Meteorology Course, that will happen in the Knowledge Diffusion building of CPTEC located in Cachoeira Paulista/São Paulo.

This course has goal present concepts and conceptual models of the Synoptic Meteorology, using available tool technological. The course will be administered by CPTEC/INPE researchers who act in the weather forecast area using theoretical and practices classes.

The registrations should be done in website of the course: <http://www.cptec.inpe.br/~rwww/MeteorologiaSinotica>. Other information can be obtained in e-mail: difusao.conhecimento@cptec.inpe.br.



Source: CPTEC/INPE.

INTERNATIONAL COURSE OF URBAN ANSWERS TO THE CLIMATE CHANGES



Urbanization and Global Environmental Change
AN IHDP CORE PROJECT

The Interamerican Institute for Global Change Research (IAI) and Economic Commission to Latin America and Caribbean (CEPAL) are organizing the International Course of Urban Answers to the Climate Changes: Political, Strategies and Instruments for Latin America and Caribbean that will occur in Santiago, Chile, from 01 to 06 November, 2010.

It will contribute for construction of actions in answer to the climate change impacts in the urban zones of Latin America and Caribbean. It relies on collaboration and sponsorship of Spain Government and "Urbanization and Global Environmental Change (UGEC)" Project of the "International Human Dimensions Program on Global Environmental Change (IHDP)".

This formation course is an effort to contribute with urban planners, stakeholders and academic in the preparation of effective actions to the climate change.

Its main goal is to enlarge the knowledge and comprehension of how urban zones can answer to the climate change (mitigation and adaptation) and to integrate these actions to its urban development at this moment and future.

The contents focused at Course will be:

- (i) Climate variability, climate change and urbanization,
- (ii) Social and urban vulnerability to the climate change,
- (iii) Adaptation to the climate change,
- (iv) Specific topics (water, health, urban climate, etc.) and
- (v) Case studies.

The registrations should be presented online through following website:

<http://iaibr1.iai.int/TrainingOpportunities/IAIcitesresponse2010TI>.

Source: IAI.

MINAS GERAIS WILL HOST INTERNATIONAL RESEARCH IN WATER CENTER

hidróEX

Brazil will be host of International Education, Training and Applied Research in Water Center (HIDROEX). Created starting from a partnership between Minas Gerais government, Federal Government and United Nations for Education, Science and Culture (UNESCO), this institution will be a study and reference center for patrimony hydrological preservation of Latin America.

"The definition of inclusion area makes with that Unesco HidroEx Institute already is born with a defined focus and goals established for its operation. The partnership in favor of Africa consolidates an opportunity so that countries that have similar ecosystems, as Cerrado and Savannah, can exchange experiences and strengthen engagement with Environment", believes the federal deputy Narcio Rodrigues, HidroEx idealizer. By Hydrology director of UNESCO, Szöllosi-Nagy, "HidroEx 's creation is going to be an important step in Unesco's Strategy to improve the environment situation at Planet. Never a project was so adequate and arrives at so opportune moment for us as arrived HidroEx to Unesco", defines him, ravished.

MCT will invest R\$ 60 million in HIDROEX, which will have as research line to sustainable and rational use of the hydric resources. The forecast belongs to that even end of the year be concluded to physical installation of the Institute, that will get located in Frutal city, at Triângulo Mineiro.

When it is finished own headquarters, will have an infrastructure geared to receive Brazilian and foreign professional in its lodgings and still will count with library, complex of laboratory, restaurant, auditoriums, class rooms, rectory, besides cultural and sporty spaces.

Source: SECTES/MG.

Meteorology in Focus

Check what it was Highlight

In this Cirrus' Retaking are going to present meetings that occurred at the second semester of 2009 and first quarter of 2010.

VIII INTERNATIONAL CONFERENCE ON COMPUTER-AIDED LEARNING (CAL) AND DISTANCE LEARNING IN METEOROLOGY AND HYDROLOGY – CALMET 2009



Since 1993, the purpose of CALMet has been to offer forums to share experiences, expectations, and new ideas for applying emerging technologies and strategies in meteorology and hydrology education and training. CALMet conferences have served to build international working relationships that continue to have a large impact on meteorology education worldwide. CALMet VIII was accomplished from 29 June to 04 July, 2009 in Saint Petersburg, Russia, hosted by the Russian State Hydrometeorological University (RSHU). The CALMet Planning Committee was composite by Professors Andrey Belotserkovsky, Edward Podgaisky and Lev Karlin (RSHU Rector), besides WG CALMet Co-Charis Pat Parrish and Vesa Nietosvaara.

The discussions treated on topics of technology for education and training delivery, innovative learning activities for students and professionals, educational resources collections and libraries, competency-based training, training program management, the evolving training and education needs of professionals, and learning and instructional theory for meteorology and hydrology education and training. The activities included sessions with paper presentations, posters, workshops, panels, and roundtable discussions.

In this CALMet conference took part 55 people of the 5 continents. Once again the unique South America representatives were Ednaldo Oliveira dos Santos and José de Lima Filho, both UNEMET, who presented two papers, an paper presentation and another in poster.



1st INTERNATIONAL CONGRES OF HYDROCLIMATOLOGY

1st International Congress of Hydroclimatology



It was developed in the Cultural Center Simon I. Patiño, located in the city of Cochabamba, Bolivia, between the 24 to August 28, 2009, the First International Congress of Hydroclimatology. This meeting was organized by the National Service of Meteorology and Hydrology of Bolivia, Universidad Mayor de San Simón, Universidad del Valle and Universidad Católica Boliviana San Pablo. It had as objective to responds to the urgent need to foster a forum for the exchange and dissemination of new scientific research results related to hydroclimate issues.

The thematic lines discussed were:

- Hydrology;
- Hydraulics;
- Climatology;
- Hydrogeology;
- Nivology and Glaciology;
- Education in Water Resources and Climatology;
- Management of Water Resources;
- Climate Change;
- Environmental Management;
- The Social Aspects the Management of Water Resources.

Besides the academic and scientific papers, was also organized a technical visit to the Angostura dam, where were shown the activities carried out since 1947, date on which the project went into operation, and a heritage for the region. Attended the meeting about 50 people in several areas of scientific knowledge.

This meeting was the First national and international Congress hydroclimatic area sponsored by Bolivia. This congress served to the participants had a perspective on the relationship between a balanced perspective on the relationship between water resources, climate and technical & scientific tools.

At the same time, it aimed to provide participants an analytical framework that allowed them to examine the various dimensions of water resources and climate at an international context, informing as well on available tools and methods that can deal with assessment, management, planning and education of water resources and climate around the world.



XVI BRAZILIAN CONGRESS OF AGROMETEOROLOGY (CBA 2009)



XVI CBA CONGRESSO BRASILEIRO DE AGROMETEOROLOGIA

The Brazilian Society of Agrometeorology (SBA), Federal University of Viçosa (UFV) Maize and Sorghum and Embrapa promoted from 22 to 25 September 2009 at GranDarell Minas Hotel, Events and Conventions Center located in Belo Horizonte, Minas Gerais State, Brazilian Congress XVI of Meteorology (CBA 2009).

The meeting was attended by national and international authorities, experts, entrepreneurs and investors, technicians, engineers, researchers, teachers, students and Agrometeorology professional and similar areas. Next to the CBA was performed sixteenth EXPOAGRO 2009, exhibition of equipment and products related to research in Agrometeorology, Agriculture, Meteorology, Hydrology, Irrigation and Drainage, Environmental Engineering, Water Resources, Alternative Energy and Bioenergy.



Over the four day of meeting was discussed the relationship of weather and climate in the agricultural sciences and forestry, and analyzing results of research on Agrometeorology and its benefits to society. Were in focus in the debates, the effects of weather and climate on the distribution and productivity of agriculture and livestock; relationships between water, soil, plants and atmosphere, as well as systems for monitoring and agroclimatical forecast. There was a roundtable on water resources, bioenergy, climate change and remote sensing, plus a mini-symposium on drought.

The program included table-round, mini-symposiums, mini-courses, paper and poster presentation and exhibition of equipment and products. Altogether 440 papers were presented scientific-technical, where 369 in posters and 71 with oral presentation. In addition, four short courses were offered for registered participants of the Congress. The meeting that is repeated to each two years, congregated about 800 people, including national and international authorities, experts, entrepreneurs, investors, meteorologists, agronomists, engineers, teachers, students and professionals in similar areas to the Agrometeorology.



Throughout CBA XIV was made the launching actions to prepare for the XV Session of the Agrometeorology Committee of World Meteorological Organization (WMO), meeting that will occur in Belo Horizonte in July 2010. It will be the first time a Latin American country will host a meeting on Agrometeorology of WMO, an organization of the United Nations (UN). The director of the Climate Prediction and Adaptation Department of WMO, Dr. Mann Sivakumar, was in Belo Horizonte and followed the CBA XVI activities.

At the end meeting was informed to all participants that next Brazilian Congress of Agrometeorology (CBA) will be held in Vitória, Espírito Santo, 2011.

III INTERNATIONAL CONFERENCE ON CLIMATOLOGY (SIC)



The Brazilian Society of Meteorology (SBMET) promoted the third edition of the International Symposium on Climatology between 24 and 27 September 2009 in Gramado, Rio Grande do Sul. With theme "Climate Change and Extremes - Risk Assessment Futures, Planning and Sustainable Development ", the meeting congregated 228 researchers, professors and students from Brazil and South America. The event program included conferences and paper presentations (plenary sessions and short presentations), discussions at roundtable and poster session.

The topics were:

1. Natural variability of extreme climate events;
2. Low frequency variability: decadal and multidecadal cycles;
3. Prediction of climatic extremes;
4. Stochastic and statistical methods for detecting climate change;
5. Role of land use change, aerosols and extremes;
6. Studies to detect climate change and attributions of the causes in South America;
7. Extremes projections of future climate scenarios and uncertainty analysis;
8. Natural disasters and associations with occurrence of extremes in various time scales.

Moreover, role of the governments in the aspects of adaptation of the society to these extremes and role of the companies in the discussions on mitigation of impacts were argued.

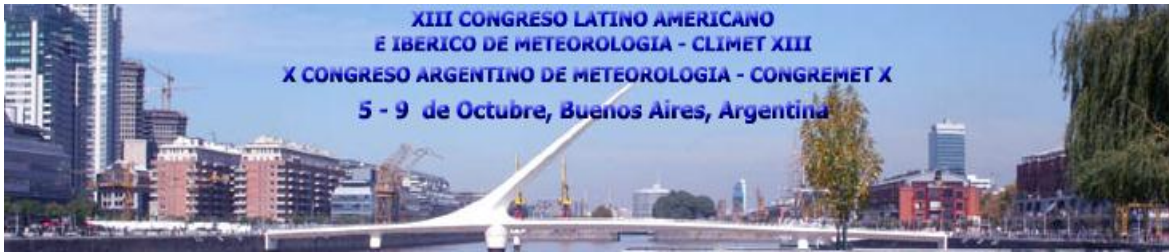
In the Roundtables were invited scientists, stakeholders, business representatives and the general public contemplating the following thematic:

1. Rains and floods in Santa Catarina, November 2008;
2. Human dimensions of climate change and risk of extremes: health and migration, urbanization, tourism and social aspects;
3. The role of companies and industries in climate change mitigation;
4. Changes in climatic extremes, natural disasters and their impact on the insurance industry;
5. Uncertainties in the extremes modeling and distribution of information to stakeholders.





XIII CONGRESS OF LATIN AMERICAN AND IBERIAN METEOROLOGY (CLIMET) AND X ARGENTINE CONGRESS OF METEOROLOGY (CONGREGMET)



The Federation of Latin American and Iberian Societies of Meteorology (FLISMET) and Argentine Center of Meteorologist (CAM) organized the XIII Congress of Latin American and Iberian Meteorology (CLIMET) and X Argentine Congress on Meteorology (CONGREGMET). The meetings occurred between 05 to 09 October 2009 at Savoy Hotel in Buenos Aires. The theme was "Natural Disasters and Climate Change".

Experts in the various knowledge areas of Latin American and Iberian attended to discuss issues related to natural disasters and climate change. The discussions were driven through conferences, lectures, poster sessions and mini-courses that guided the thematic.



XVIII MEXICAN CONGRESS OF METEOROLOGY AND III INTERNACIONAL CONGRESS OF METEOROLOGY OMMAC



The Mexican Meteorological Organization (OMMAC) organized the 18th Mexican Congress of Meteorology and the Third International Congress of Meteorology OMMAC. The meetings took place at hotel Parnassus in Cancun, Mexico, from 10 to 13 November 2009.



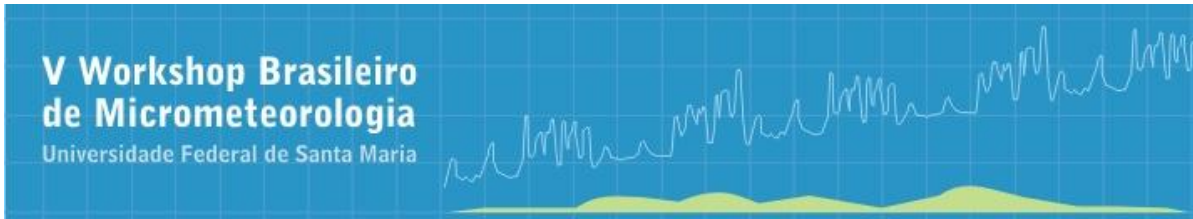
The aim of the meetings were to provide a forum for updating knowledge, technology transfer and technological innovations and create groups of research and technological development that may solve many problems connected with application of meteorology, climatology and Hydrology in various economic activities in Mexico.

The target participant involved professionals, researchers, teachers, students and general public related areas of Civil Protection, Government, Private Companies, Universities, Institutes and Research Centers and other peoples who like Meteorology, Climatology, Hydrology, Environment, Pollution Atmospheric, Geographical Information and Informatics Systems.

The topics discussed during the meetings were:

- Civil Protection.
- Climatology, variability and climate change,
- El Niño/La Niña,
- Tropical Cyclones,
- Environmental and Air Pollution,
- Numerical and Statistical modeling,
- Biometeorology,
- Agricultural Meteorology,
- Marine Meteorology,
- Aeronautical Meteorology,
- Hydrometeorology,
- Instrumentation meteorological,
- Information processing of data validation methods,
- Remote Sensing (satellite and weather radar),
- Systems of Geographic Information, Meteorological and Climatological,
- Weather Risk in Insurance,
- Atmospheric Physics,
- Meteorological Education and environmental,
- World Program as Thorpex, Milagro, etc. as well as innovation and technological development in different applications

V BRAZILIAN WORKSHOP ON MICROMETEOROLOGICAL AND III SOUTH BRAZILIAN MEETING OF METEOROLOGY



Santa Maria, Rio Grande do Sul has hosted two important meetings: V Brazilian Workshop on Micrometeorological and III South Brazilian Meeting of Meteorology (ESBM III). They were conducted from 15 to 20 November 2009, under the organization of the Meteorology course, Federal University of Santa Maria (UFSM). The theme of ESBM III was "Global Climate Change: Effects on Regional Climate and Weather".

From the experience gained in knowledge of micrometeorology since 1999 and every two years, the group micrometeorology UFSM and his colleagues promote a conference bringing together the Brazilian community micrometeorological. These events have been important not only for the exchange of updated information in the area, but also as an incentive to existing collaborations and foster new exchanges. It is worth noting that the papers submitted and selected in the previous meetings were published in national refereed journals (Science and Nature) and international (Hybrid Methods in Engineering).

The area of micrometeorology, today, presents an interdisciplinary, congregation knowledge of the communities of Meteorology, Mathematics, transport phenomena, air pollution, ecology, agronomy, environmental sciences, among others. In this respect, much of the knowledge generated by national research groups in this area is scattered. The first four editions of the Brazilian Workshop Micrometeorology (initially called the Workshop of Physics of the Planetary Boundary Layer and Dispersion Process Modeling) achieved the goal of bringing together this dispersed knowledge.



One of the activities carried out in this event was I Concourse South Brazilian Weather Forecasts. The target cities were of forecast were Pelotas, Santa Maria and Florianopolis. The participants, students on courses of Meteorology, prepared a report valid for the next two days in which there were predictions of temperature (maximum and minimum) and the possibility of precipitation for the target cities. The activity promoted great integration between the students of three educational institutions in Meteorology at Southern Brazil: UFPel, UFSM and IF-SC.

The meeting, which had support of collaborating institutions and the Brazilian Society of Meteorology, recorded the presence of 140 persons with participation of leading researchers from national and international reputation. The next meeting will be conducted in Pelotas, Rio Grande do Sul, 2011.



V CUBAN CONGRESS OF METEOROLOGY



The Meteorological Society of Cuba on its 17th anniversary of creation, organized from 1 to 4 December 2009 the Fifth Cuban Congress of Meteorology. It was held in Havana, Cuba. The meeting was attended researchers, professionals, staff, faculty, students and lovers of Meteorology, to consult and broaden their knowledge of extreme meteorological events, as well as deepen and exchange opinions on the state of knowledge in multidisciplinary research on the laws and mechanisms, highly dynamic of the Atmospheric Sciences.

The activities were organized through oral presentations, as well as roundtables, poster session, symposia, seminars and conferences that were developed during the meeting to focus on issues related to the Congress especially political and economic decisions which plan environment in our society.

The themes were:

➤ Variability and Climate Change	➤ Chemistry, Air Pollution and Atmospheric Environment
➤ Climatology	➤ Renewable Energy
➤ El Niño/La Niña	➤ Atmospheric Physics
➤ Tropical Cyclones	➤ Risk, vulnerability and mitigation of meteorological disasters
➤ Meteorological Forecast	➤ Biometeorology
➤ Marine Meteorology	➤ Education of Meteorology and Environment
➤ Agricultural Meteorology	➤ Application of Remote Sensing (satellite and weather radar)
➤ Aeronautical Meteorology	➤ Protection Civil
➤ Geographic Information Systems	➤ Meteorology and broadcast mass media
➤ Surveillance Systems	➤ Meteorological Instrumentation
➤ Paleoclimatology	➤ Information processing and data validation methods

In parallel, the Cuba Meteorological Society of Cuba (SOMETCUBA), National Union of Architects and Builders of Cuba (UNAICC) and Federation of Cuban Women (FMC) held the Second National Conference on the Participation of Women in Meteorology and Hydrology. The aim of this meeting was to promote the study on the activity of women in science, specifically in Meteorology and Hydrology and obtain conclusions about what to do to ensure the quality and increase women's participation in this important field of knowledge.

CELEBRATION 100 YARS OF INMET



Authorities, experts, representatives of the state centers of Meteorology and partner institutions from various parts of Brazil, employees, collaborators and special guests had crowded the Adalberto Serra auditorium, on the morning of November 18, 2009, for the official opening centenary celebrations of the National Institute of Meteorology (INMET). The Band of Firefighters Federal District performed the Brazilian National Hymn, anticipating the Official Opening. The development of human resources was emphasized by Reinhold Stephanes, Minister of Agriculture, Livestock and Supply (MAPA): "Over a century, thousands of people worked for Meteorology in Brazil and led us this far. To them we should applaud, we must honor them", said



Antonio Divino Moura, Director of INMET, thanked all those present and, in particular, the Minister Stephanes, emphasizing his support for the Institute's activities and work that is done in conjunction with the Ministry of Agriculture (MAPA) on the issue of mitigation climate change. Divino Moura noted that INMET has advanced greatly in cooperation with operational and academic institutions in Brazil and the world and said that "Nobody does Meteorology alone, the more money you have. Everything that happens on the planet resonates elsewhere". He also spoke of the notable presence of INMET in the World Me-

teorological Organization (WMO), representing Brazil permanently, and the aspect of work integrated with the developed countries of South America and Latin America. Moura said that was happy to show the INMET as a modern institution with much experience.

Throughout the ceremony were released two unpublished books. One of them, "INMET 100 Years of Meteorology in Brazil", documents the centennial history of the Institute, in Portuguese and English for distribution to all countries around the world, WMO members. The other book, "Agrometeorology of Crops: The Meteorological Factor in Agricultural Production congregates a broad base of over 32 major Brazilian agricultural crops and their relationships with meteorological conditions. The book project, organized by INMET, was executed by 29 working groups, comprised of 105 researchers from 37 institutions.

As part of the INMET centenary celebrations, one of the auditoriums of the Institute was named Auditorium Sampaio Ferraz, in recognition of valuable contributions that Joaquim Sampaio Ferraz provided to Meteorology national and international. The plaque was unveiled with participation of director INMET and nine family members Sampaio Ferraz who moved from Rio de Janeiro and Sao Paulo to give tribute to his father, grandfather and great grandfather.



Another activity that took place in view of 100 years was the opening of the Director INMET Gallery.

WORLD METEOROLOGICAL DAY 2010 COMMEMORATION



The March 23 is undoubtedly the most important date for the international meteorological community. It marks the establishment, 1950, of the World Meteorological Organization (WMO), one of the most important Organizations of the United Nations (UN). Currently, the institution congregates 189 member countries and its headquarters is situated in Geneva, Switzerland. The theme chosen to commemorate World Meteorological Day (WMD) this year is "WMO: 60 years of Service for Your Safety and Well-Being". Several WMO Programs and other activities provided outstanding examples during those six decades of socioeconomic benefits, regarding matters related to weather, climate and water resources management, which can be achieved by many sectors through cooperation in the field of Meteorology, especially in terms of human security and welfare, obvious examples include agriculture and food security, health, transport, tourism, construction and energy, among others.

See below for events held in commemoration of the WMD in Brazil.

BRASÍLIA - DF

The National Institute of Meteorology (INMET), under Ministry of Agriculture, Livestock and Supply (MAPA), celebrated World Meteorological Day with various activities at its headquarters in Brasília. As this year's theme was "WMO: Sixty Years of Service to Your Security and Welfare", INMET organized a series of lectures by specialists of the agency and University of Brasília (UNB), held at the Adalberto Serra Auditorium.

Meteorologist Francisco A. Diniz gave a lecture on "60 Years of Activity of WMO", 100 years INMET and major meteorological phenomena of the decade. Sequentially, Seismological Observatory head of Brasília University (UNB), George Sand de France, spoke on "Earthquakes in Brazil and World, Studies and Perspectives", with emphasis on recent earthquakes in Chile and Haiti. At the end it was offered a cocktail allusive to the WMD 2010.

BAURU - SP

The Meteorological Research Institute, UNESP, Bauru (IPMet) held on March 23 ceremony in the auditorium of IPMet allusive to the World Meteorological Day celebrations.

At the time, were also celebrated 35 years of the inauguration of the meteorological radar of IPMet. The Institute was the first in Brazil and Latin America to use radar for Meteorological purposes. The meeting has lectures, inauguration of laboratory monitoring environmental, and a closing cocktail

BELÉM - PA

The celebrations of the World Meteorological Day in Belém were organized by the 2nd District of Meteorology (2nd DISME) INMET.

The meeting, held in the auditorium of the Agriculture and Livestock Federation of Para (FAEPA), was a partnership among Civil Defense, UFPA, Embrapa, Evandro Chagas Institute, CEPLAC and FAEPA, providing a cycle of conferences given by experts and researchers nationally renowned.

Approximately 174 people, including academics, representatives from government agencies, researchers and doctors from various universities attended.

All speakers highlighted the importance and contribution of Meteorology for various sectors and segments of society as a whole.

BELO HORIZONTE - MG

In celebration of World Meteorological Day, the 5th District of Meteorology (5th DISME) INMET held multidisciplinary meeting with participation of ClimAgora through lecture entitled "Meteorology and Climatology applied to Environmental Issues".

This event was held in the afternoon at the Auditorium of the 5th DISME/INMET localized in Santo Agostinho, Belo Horizonte/MG.

MANAUS - AM

The State University of Amazonas (UEA) celebrated World Meteorological Day with lectures and laboratory inauguration. The event was organized by coordination of the Meteorology course and Meteorology and Hydrology Center of UEA.

The meeting theme followed the guidelines proposed by World Meteorological Organization - WMO: "60 YEARS OF SERVICE FOR YOUR SAFETY AND WELL-BEING" and happened on 22 and 23 March in the Technology School auditorium, Manaus, from 17h30min.

On the first day were inaugurated Laboratories of Modeling Atmospheric and Meteorological Instruments, as well as an Automatic Weather Station installed on UEA Campus/Technology School, along with personnel from 1st DISME (INMET)

The first day speaker was Nelson Jesus Ferreira, chairman of the Brazilian Society of Meteorology (SBMET) and researcher at the National Institute for Space Research (INPE), which addressed the theme proposed by WMO. On the second day, three thematic workshops were held: a) Documentary on Climate Changes, b) Meteorological Laboratory experiments, and c) Lecture entitled: "Meteorology and Opportunities in the Amazon", conducted by researcher José Augusto Paixão Veiga.

In Manaus, a seminar was also held at the headquarters of the 1st DISME/INMET, aiming to celebrate WMD. Lucia Gularte da Silva, 1st DISME head, spoke about 60 years of WMO and highlighted the centenary INMET. Guests at the Federal University of Rio Grande do Sul, CINDACTA IV and SIPAM presented lectures on the influence of Meteorology in their areas of expertise and research.

PORTO VELHO - RO

The Amazon Protection System (SIPAM) and the Secretary of State for Environmental Development (SEDAM) in Rondonia organized conferences cycle to celebrate World Meteorological Day and Water Week.

SEDAM-RO Partners, teachers, students and others interested in Meteorology attended conferences given by meteorologists of

the two agencies. Fabio Adriano Saraiva (SEDAM-RO) addressed the theme "Weather as a Tool for Economic Management in the Rondonia State, and Jose Carvalho (SIPAM) spoke on" Global Warming and Climate Change". After the presentations was made a visit to Meteorological installation and practical demonstrations at SIPAM.

SÃO PAULO - SP

To celebrate World Meteorological Day, the Astronomy, Geophysics and Atmospheric Sciences Institute (IAG) promoted in the March 23 a lecture "Where are the Meteorologists Working?".

The meeting was held at the Auditorium located on campus of IAG/USP and was attended by professors, students and staff of the Institute.

RECIFE - PE

The WMD celebration in Recife were charged to the 3rd DISME/INMET and CINDACTA-III which commemorate the date with exhibitions held in Recife Metro Station and the Guararapes International Airport.

The 3rd DISME/INMET made a presentation educational and distributed leaflets with the theme "World Meteorological Organization: 60 Years of Service for Your Safety and Welfare and Well-Being", booklets on Global Warming and El Niño and La Niña, which influence rains in the Northeast, as well as INMET News. It had been used banners depicting WMD and the INMET centenary for the general public.

The Third Integrated Center for Air Defense and Air Traffic Control (CINDACTA III) celebrated World Meteorological Day through a static exposition in the Guararapes International Airport lobby in Recife/PE. A console X-400 was assembled on site to allow visitors to explore some of the activities in CINDACTA III. The Commander of CINDACTA III, Lie. Col. Aviator Candez, congratulated all the aeronautical meteorologists, emphasizing that since beginnings of aviation, they have been vital to the safety of air operations

RIO DE JANEIRO - RJ

The Regional Center of Rio de Janeiro's SBMET organized on March 26, 2010 a ceremony to commemorate World Meteorological Day. The event was held in the auditorium of Engineering and Architecture Regional Council at Rio de Janeiro (CREA/RJ), with lectures and celebration.

The opening occurred at 17 hours with conference "A Brief History on Goal Meeting" by meteorologist and professor at the State University of Norte Fluminense (UENF), Valdo Marques da Silva, followed by the presentation "Global Warming: Myth or Reality" , given by Professor Luiz Carlos Baldicero Molion, Course of Meteorology, Federal University of Alagoas (UFAL).

The meeting was attended by about 180 people, among professors and students of UFRJ, CEFET-RJ, employees of CREA-RJ, meteorologists aeronautical, navy and private companies, among others.

Collaborators in this Edition:

- Social Communication Assessor/SIPAM.
- Communication Assessor/UEA.
- CREA-RJ Website.
- Gabryella Fernanda, Journalist Collaborator of MAGAZINE WEBASAS.
- National Institute of Meteorology/Brazil (INMET).
- IAG/USP Website.
- Rondonia Digital.
- SBMET.

If you want to publish some meeting related with Meteorology and/or similar areas, is enough to send an email to cirrus@unemet.org.br



The poster features logos for SEDAM (Secretaria de Estado do Desenvolvimento Ambiental), Semana da Água, and SIPAM (Sistema de Proteção da Água). The main text reads "DIA METEOROLÓGICO MUNDIAL" and "23 DE MARÇO DE 2010". It also includes the theme "OMM - 60 Anos a Serviço de Sua Segurança e Bem-Estar" and a list of activities under the heading "PROGRAMAÇÃO".

PROGRAMAÇÃO

- 14h30 Abertura e Leitura da Mensagem da Organização Meteorológica Mundial.
- 15h Palestra: Meteorologia como ferramenta de gestão econômica no estado de Rondônia. Responsável: Fábio Adriano Saraiva, meteorologista - Sedam.
- 16h Palestra: Aquecimento global e mudanças climáticas. Responsável: José Carvalho, chefe da Divisão de Meteorologia - Sipam.
- 17h Visita às instalações da meteorologia do Sipam.



The Influence of Meteorology on Human Health

“ *It is necessary to intensify research on Biometeorology, therefore initiatives in this area have been shy and little valued by academic and financier institutions of research projects* ”



Expert in the Biometeorology area, a field still little known in Brazil, our interviewee tells of his fascination and experience on this area of Meteorology very important in recent times where actively discusses issues related to air pollution and environmental, climate change and diseases caused by these factors. To speak of the importance that Biometeorology has on human health, we interviewed Professor Jose Clênio of the Atmospheric Science Institute (ICAT) of Federal University of Alagoas, who studies the Influence of Atmosphere on Human Health (Human Biometeorology), beyond to being author of the book entitled "Biometeorology: Case Studies in Maceio, Alagoas".

CIRRUS – What are lessons learned over the years teaching classroom of Biometeorology?

Prof. José Clênio – There is great difficulty in working with Biometeorology, especially the Human Biometeorology (area where I have been working), due to acute shortage of literature and scientific papers published by Brazilians or in Portuguese, but also by the lack of disclosure of the few which exist in Brazil!

Moreover, even with some adversity, this topic attracted me. As far as I can, not just past the little knowledge that gained over more than a decade, as have encouraged

research and paper in this area of knowledge.

CIRRUS – Throughout the I Seminar on Biometeorology: Atmosphere and Society, in 2008, were agreed that would create a Regional Section of the Brazilian Society of Biometeorology in Alagoas and quarterly seminars would be organized to congregate researchers from several areas around this study filed. These were accomplished?

Prof. José Clênio – As mentioned by Prof. Iran (Biometeorology Brazilian Society President – SBBiomet, in 2008) when he was in Maceio during this meeting, could only be created a Society section in Alagoas, after the next national congress of Biometeorology, where SBBiomet would meet and deliberate on the issue.

After this, there was a change in the presidency of SBBiomet, where with this came back to square zero and we had to start all over again!

Regarding to the quarterly seminars, this proposal was not mine, because there was a very strong consuming of my health due to few collaborations that I got inside and outside of UFAL to organize this meeting. As the Seminar in 2008, I would venture to carry out only one each year, because is necessary people who collaborate effectively and this has been difficult to achieve!



Climate acts on human health, not only indirectly through air pollution and vector-borne disease transmissions, but also directly causing deaths in hospital beds and becoming more serious illnesses than they already are

CIRRUS – What is your assessment at the time on role of the influence of Climate on health?

Prof. José Clênio – Climate acts on human health, not only indirectly through air pollution and vector-borne disease transmissions, but also directly causing deaths in hospital beds and becoming more serious illnesses than they already are. This occurs because the human body has centers of perception to the meteorological stimulus that influence in the physical and chemical metabolism of the human organism.

As is known to all, the Earth's climate has undergone considerable change and its relation to the health of living beings is extremely dynamic. To each different weather and climate variations, meteorotropical different answers appears in living organisms. For this reason, is necessary to intensify research in this area, because the initiatives in this field have been shy and not valued by financier institutions for research projects. If one does not invest in research, have not been results for divulge and the role of climate on health is being only "theoretical fallacies"

CIRRUS - Why Biometeorology in Brazil is underdeveloped compared with other meteorology areas?

Prof. José Clênio – Historically, Brazilian meteorologists have not worried about Biometeorology development in our country, just look how many meteorologists had participated of the SBBiomet from its

foundation until the present moment! The politics of resource distribution in Brazil, including inside Meteorology, has not been favorable to Biometeorology, perhaps by the small number of meteorologists qualified in this area, because there are many more professionals of the fields of zoology and fitotecnic acting on it. I believe to be these, among other good reasons why Meteorology is much more developed than Biometeorology.

CIRRUS - How to leverage its development and to encourage more people to work with this theme so important in Brazil?

Prof. José Clênio – So that its development occurs is necessary, in my view, which fulfills some stages:

1 - Initially, to count on the goodwill of those who already work in this area and on the contribution of sensitized others in this direction, to the formation of local groups, that joined, can establish goals and accomplish them effectively in order to develop this science nationally;

2 - To stimulate students to become qualified in countries with emphasis on scientific development of Biometeorology;

3 - To fight so that the Meteorology courses of Brazil put in its curriculum classroom as "Phytological Biometeorology", "Zoological Biometeorology" and "Human Biometeorology" as class obligator at graduation and Post-Graduation the courses, as well as encourage research in these areas knowledge.



CIRRUS - Do you believe that Biometeorology can benefit from current research regarding to climate change issues?

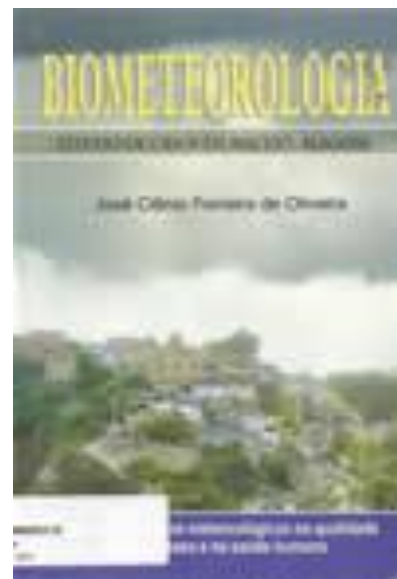
Prof. José Clênio - Of course, because Biometeorology is the science that studies the relationship between "changes" that occur in the Weather and Climate and Health of living beings. In the case of man, quality of life is also included (rural and urban). Changing the climate, therefore there will be changes in the meteorotropism of the alive being.

Thus, information about climate change may determine the severity of the situation or mitigation of disease that are present in human life, or that could be in a near future

CIRRUS - What is your final message?

Prof. José Clênio - I invite all those worry on influence of the variations of weather and climate on human health, to "join forces" towards the further development of Biometeorology in our country. I also want to be thankful for the opportunity that magazine Cirrus offers me to participate effectively in the dissemination of science, and I am willingness to work on what is needed for its development.

Before closure of this matter, we got information that from 10 to 12 November 2010 Prof. Clênio will be organizing the II Seminar Atmosphere and Society (SAS II). So we invite the whole to participate in this important meeting. Further information can be found in our Session **Agenda**.



Technical Data

- Graduate in Meteorology by UFAL (1984);
- Expertise in Semi-Arid Agrometeorology by UFAL (1995);
- Master in Development and Environment by the Regional Postgraduate Course in Development and Environment - PRODEMA, by UFPE (2004);
- He is Extension Coordinator of Atmospheric Sciences Institute of UFAL.

STRENGTHEN TO DO NOT RECEDE!



Meteorology comes along time being used each more and more in the most diverse sectors of the economy. Moreover, the spreading is being enlarged in theme view of the climate change. Therefore, the meteorological community should take advantage the moment for the strengthening of our career and to fight by your rights. Unfortunately, some believe that would be better just change the profession name and this would solve all of our problems, just for think with this change would be more respected or valued.

The Project of the title alteration of Meteorologist for Engineer Meteorologist really is a change weak acceptance, as shown by that so much in the professional scenario as in the academic and scientific question would not be neither convenient and nor transforming.

Although the Law Project to bring some elements from modernity, is observed that can bring serious professional and academic consequences with the question of name change. Because, would be very better to strive for Meteorology valorization instead of simply change the name, or the LOGO, as some call!

Firstly we note that regarding to the elaboration and guiding of this Project that Brazilian Meteorology Society (SBMET), schools and operational services of Meteorology were neglected of the process, where should have

been properly heard having in mind that there would be implications to all.

In other words, we criticize authors' Project attitude because limited the discussion on the subject, instead of have enlarged discussion mostly to reach directly all the professors, Students and Meteorology professionals, what after all would be possible using the existing current ways.

The exclusion effect regarding the discussion on this Project was very inconvenient and unsatisfactory, and in a way showed authors' inexperience. We consider the manner used mistaken, for deny to various people involved in the subject of expose their view points.

It is very important that occurs discussion for the creation of a Law that wants consequently to change the name of a



profession, and that will have great influence directly for life of many involved ones.

We point out that changes of this kind should be analyzed in the perspective of a profession "update" process and do not on question focused in the profession name change. Therefore, the adoption of this project will find problems and limitations when incorporated, if to come to occur in Brazil. This occurs in specificities reason of the Brazilian meteorological community. In other words, the discussion gave of inversely proportional manner to that should have occurred with participation of all Brazilian meteorological community due to its great importance.

Some referred Proposal points are enough incipient: The expression Engineering means a career that requires construction, Civil, Electronic, Electric, Environmental, etc. The Agricultural Engineer can build vegetation houses, pigsties, roads and electric facilities in the rural area. But for this it learns architectural delineation, rural constructions, roads, leveling for soil erosion contention, etc. And Meteorologist pass for Engineer? At least in the proposal does not have any justification in this direction.

Build meteorological charts, constructions for observer rooms, install meteorological equipments, prepare infrastructure to build meteorological shelters, build software for numeric forecast, etc. Many of these activities need planning with detail, inclusive space distribution. And that does the current meteorologist learns in this area? If that was included, what would be time of course duration? In this project does not consist anything than the current schools should do to pass for Meteorological Engineering. And what would be the curriculum?

For example, in 2009 the bachelor course in Atmospheric Sciences was created at Federal University of Itajuba (UNIFEI), based in the Law of 1980. And now? How what stays in CREA does not consist the expression Bachelor in Atmospheric Sciences? In other words, in CONFEA/CREA System these changes cannot be carried in consideration and to do not be accepted for other professionals, and one more time we will be isolated and discriminated.

Other obstacle for the implantation of this project would be the question of courses curricular guidelines adaptation of Meteorology for Engineering that are dissimilar mostly in the

professional part, that will generate academic and structural conflicts of allocation.

Moreover, other controversial particularity of the Project is stimulus to the professional competitiveness. Although that can motivate initially some people to seek the best performance, afterwards this will transform in despair, because nowadays there are more than 200 engineering denominations, where is debating in decrease for 53 names to the engineering. Even so, being a risen range of theses, consequently the mentioned "Meteorological Engineering" runs the risk again becoming in the second or third plan inside this new order.

We do not understand because have that always to be in the skirt of Engineering as some defend. They mention that to those professionals graduated in Engineering are stronger and that perceive more in terms of salaries, but that only occurred because of fights inside their career and with class representation. Meteorology is not and will be never an engineering specialization, because its origin is connected to the natural and exact sciences, such as, geography, geology and oceanography. Our number of schools really is small when if compared to the engineering, but not when we compare to the geology and oceanography schools, for example.

We will analyze some numbers to be able to reflect a little on this discussion: There is in Brazil nowadays 8 Meteorology Schools, 12 in Oceanography and 20 in Geology. The professionals' salaries graduated in Geology and Oceanography are similar to those of engineers. So, why we do not follow example of these professionals what have professionals graduated quantity, schools and scientific similarities? In synthesis, these two professions, that are similar to us, fought against this idea of avoided front to the engineering, and today they own professional salaries as good as the ones of engineers.

For a reason or purpose clarification, the basic salaries of meteorologists and engineers are the same ones: Six minimum salaries for six daily hours of work and eight and half minimum salaries for a journey eight hour daily. This is the minimum, that is, each career should strive to increase its remuneration.

Meteorologists need to verify if their contractors accomplish with this salary base established by the Professional System. Clearly, that the market also influences in theses professional remunerations.



Important to remember you that the system CREA/CONFEA, by law, is the agency of professional fiscalization. In other words, the Advice should check in every institution, company and business, that develops and or uses Meteorology and Climatology services, has responsible-technician Meteorologist registered in CREA and if the Meteorology and Climatology activities are developed by professional enabled by CREA. In this scope, the career valorization comes of to need to protect the society from laymen, bad professionals and of that disregard the legal principles.

Moreover, will not be a new nomenclature that will provide the "inclusion" or larger recognition of meteorologist in the CONFEA/CREA System, who by Law of 1980 is the responsible agency for the profession inspection and regulation. Therefore, it has obligation of "embrace" the Meteorologist as any other professional who represents, be Architect or be Engineer. Actually, should stimulate the professionals to charge their rights and to be citizens.

So, it also should think as important element for reformulation of the Meteorologist Regulation Law. Thus, many of the questions that today are thought as Meteorology modernization elements are, actually, fight and invigoration process conquests of the profession that are not immediate and that depend on the joint effort of all.

We should strengthen it and not simply change the nomenclature and to believe that with that are going to be more strengthened like some believe. We owe yes elaborate strategies to face the typical challenges of Brazilian meteorological society at the current moment of great debates on climate changes for example.

Various people linked to the Meteorology (students, teachers and professionals) heard by UNEMET about this subject manifested saying that the meteorological community wants improvement, invigoration, and that was accomplished the existing Law, and not change of the professional name, by believe that this would

not change the current problems and could even prejudice more still if that came to occur. They also mentioned that should be debated alternatives of solution for the current problems with participation that are linked to the Meteorology.

In other words, what fault is to fight and to strengthen our career and to do not stay in the "skirt" from other professions that do not have any relationship with our origin. If you are an inspection matter, why we do not claim, using until judicial ways, so that does CREA/CONFEA System accomplish its duty in to fiscalize and do to punish the ones that are disobeying our Law? Or then, why we do not create our own Council or even if join us the professionals what own scientific similarities and create a council of this nature, for example, Geosciences that could include Meteorology, Geology, Oceanography and Astronomy?

Will it be what is that difficult? It can be, but the idealists and precursors of our Law strove a lot to see our profession be regulated and now some see and want to change instead

of strive, thus do not consider correct this form. Sincerely what lacks is joint fight between all of us professionals or the ones that will become in the future.

UNEMET is totally contrary to this change and is going to strive so that that does not occur, and even if occur considers that it will be one more Law than is not going to catch and for English to see, expressions very used in Brazil, because the main involved actors were not

heard: schools and the professional futures of Meteorology. Since, who elaborated this Project is more worried with his current job and not with the future generations.

In synthesis, we expect to obstruct this project concerning the name change and afterwards join efforts to assure Meteorology activities invigoration and update, seeking with that to increase the legal actions demand in our career, assuring that all of its rights be respected in all public and private institutions



UNEMET TEAM.

You Can Program Yourself

Check below at list of the main conferences, in Brazil and the world, that will go to happen in this second semester of 2010.

12-15/Oct./10

24th SATELLITES EARTH OBSERVATION COMMITTEE MEETING

<http://www.ceos.org>



The 24th Satellites Earth Observation Committee Meeting (CEOS, in the acronym in English) will be accomplished from 12 to 15 October at Rio de Janeiro city. In 2010 CEOS's Presidency is being exercised by Brazil, represented by National Institute of Space Researches (INPE), which encourages the meeting to argue the advances obtained last year and to study strategy to be adopted in the near years. Created in 1984, CEOS is responsible for the global coordination of civil space programs and by satellites data Earth observation exchange. CEOS's Presidency, which meets 28 space agencies and 20 national and international organizations, attests the world recognition from Brazil as leader in the use scattering of orbital data.

The satellites data exchange provided by CEOS unites efforts and allows to obtain more information for deforestation study, forecast of natural disasters, biodiversity preservation, in other important applications in the current scenario of climatic changes. Brazil took over CEOS's annual presidency during Committee plenary accomplished in November last year in Phuket, in Thailand. In Rio de Janeiro, there will be a plenary new to define the next mandate.

XIII ARGENTINE AND VI LATIN-AMERICAN OF AGROMETEOROLOGY REUNION

20-22/Oct./10

<http://www.ralda2010.com.ar>

Agrometeorology Argentine Association (AADA) between 20 and 22 October, 2010 will accomplish at XIII Argentine and VI Latin-American of Agrometeorology Reunion. The will occur in rooms of National University Del Sur and Cereals and Products stock market of Bahía Blanca, located at Buenos Aires' Province, Argentine.

The meeting theme is "Agrometeorology Without Borders", and will be debated the researches next lines: 1) Hydric Resources; 2) Evaluation, Planning and Administration; 3) Productivity and Climatic Change; Vegetable, Animal and Forest Production; 4) Teledetection GPS and GIS; 5) Statistical and Models Agroclimatical; 6) Ecological Agriculture and Alternative Energy Sources; 7) Stations and Meteorological Stations Network; 8) Instrumental and Agrometeorological Service; 9) Agrometeorology, Agribusiness, Agricultural Insurances; 10) Agroclimatical Risk Forecast; 11) Didactic in Agrometeorology; and 12) Agrometeorology and Biometeorology.

In the Reunions were programed two short duration courses (Agrometeorology and Environmental Administration and Evaluation Techniques of Animal Comfort) and one of Post-Graduation (Micrometeorology).





More information will be able by e-mail: aada.2010.info@gmail.com.

6th MEETING WITH SATELLITE IMAGES USERS AND SENSORING REMOTE

25-27/Oct./10

<http://www.dqi.inpe.br/usr/eusisser-6>

The 6th Meeting with Satellite Images Users and Sensoring Remote (EUsISSeR) will be accomplished from 25 to 27 October, in Technological Park of São José dos Campos (SP).

Educators, business men and too much professionals connected to the use and to the products commercialization used in sensing remote for satellite are the public target of this meeting which aims to present images database production of the National Institute of Space Researches (INPE) and access forms to that content.



Among applications that will be presented is sugar-cane plotting for satellites (Canasat Project), Atlantic Wood forest coverage accompaniment and Amazon Forest and Monitoring and Vigilance System for Natural Disasters (Sismaden).

Also are foreseen at the programming presentations about high resolution systems sensors, sensing remote of atmosphere and new family of Sino-Brazilian terrestrial resources satellites (CBERS, in the acronym in English).

[Programming, registrations, costs and other information are available at website above.](#)

II ATMOSPHERE AND SOCIETY SEMINAR (II SAS)

10-12/Nov./10

<http://www.icat.ufal.br/eventos/IIsas>

II Seminário Atmosfera e Sociedade (II SAS)

Extension coordination of Atmospherical Sciences Institute/ICAT, next to some professor and students collaborators, since 2008 (after accomplishment of "I Biometeorology Seminar: Atmosphere and Society"), comes developing a work with purpose of encouraging researchers who use atmosphere as object of their researches, to the addresses them in behalf of life quality improvement of the local society. Thus, at 2009, ICAT Board decided to implant its Extension program with the title "Atmosphere and Society" and in this same year was accomplished I SAS.

II Atmosphere and Society Seminar (II SAS) is an meeting multi and interdisciplinary that will announce scientific researches and extension activities performed by Alagoas Federal University, with goal of knowing direct and indirect relationships among Atmosphere-Society-Alive Beings. This relationship is research object of several areas of the scientific knowledge such as: Meteorology, Hydrology, Engineering (civil, chemistry, environmental), medicine, biology, architecture and urbanization, sociology, geography, psychology, agronomy, phytology, zootecnical, veterinary, chemical, physical, environment, oceanography, ecology, in other.

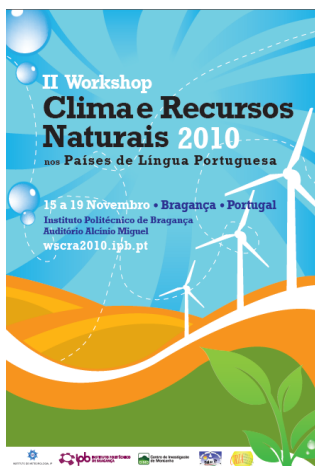
This meeting will board topics involving phenomena and meteorological elements in its various relationships with practical aspects of the human life and alive beings. II SAS is destined for students and professors of the secondary and superior courses (additional Post-Graduation) of public and private universities; Professionals of the similar areas; and Alagoas citizens from general manner.

[Other information will be able by website above.](#)

II CLIMATE AND NATURAL RESOURCES 2010 WORKSHOP IN THE PORTUGUESE-SPEAKING COUNTRIES – WSCRA10

15-19/Nov./10

<http://wscra10.ipb.pt>



II WSCRA09 will have as theme "Strategies for the Services establishment of climatic information in CPLP", and will be organized by Countries Agency of Portuguese Official Language for the Climate Area and Respective Environmental Implications (CRIA), Meteorology Institute (IM) of Portugal, National Institute of Meteorology and Geophysics (INMG) of Green Cape, Bragança Polytechnic Institute (IPB) and Mountain Investigation Center (CIMO), both Portugal. It will occur in the Bragança city, Portugal, from 15 to 19 November 2010.

This meeting will continue with recommendations of I WSCRA08, to do its balancing, and at the same time has as objective find mechanisms at optics of the Climate World Conference recommendations so as to implement services of climatic information in the different Portuguese-speaking Countries.

Additional information about meeting can be obtained at website above or with Prof. Tomás de Figueiredo by e-mail wscra2010@ipb.pt.

INTERNATIONAL SYMPOSIUM ON CLIMATIC CHANGES, IMPACTS AND VULNERABILITIES OF BRAZIL

22-26/Nov./10

<http://www.ccet.ufrn.br/index.html/>



From 22 to 26 November will be accomplished at Natal city (RN) the International Symposium on Climatic Changes, Impacts and Vulnerabilities of Brazil: Preparing the Brazilian northeast for the Future.

The aborted thematic areas will be: Ocean-atmosphere Interaction, Extreme Events and Semi-arid, Atmosphere and Ocean Instrumentation, Climate Modeling, Environmental Impacts and Mitigation, Migration and Adaptation Social Measures.

The symposium is accomplished by the Post-Graduation Program at Climate Sciences of the Exact and Earth Sciences Center of UFRN and by National Institute of Space Researches (INPE).

More information by e-mail mciv-neb@ccet.ufrn.br.

Note: If you want to publish some meeting related with Meteorology, or similar areas, is only to send an e-mail to:

IN CLIMATE OF HEALTH



Many of our ailments, such as, for example, headaches, nervousness, fatigue and circulatory disorders, are often attributed to meteorological conditions. But, will weather and climate really affect our health? It was to answer this question that we prepared this matter to demonstrate the Meteorology versatility and open a wide discussion among Meteorology, environment and health, especially for evidence that meteorological science goes beyond the weather forecast stereotype. Therefore is something to be better explored, reported and well-known by all people.

METEOROLOGICAL CONDITIONS AND HEALTH

People have, since ancient times, certain meteorological conditions associated with health. The connection between weather and health is especially clear when the rate of skin lesions increases during heat waves or during periods of extreme cold that put elderly at much high risk of death.

The disease that results from extreme temperature and UV radiation is an obvious effect of the meteorological conditions on health. Not so obvious effects include the influence of weather on our mood, behavior and general welfare.

Researchers perceived that the medical conditions were not enough to explain all diseases, justifying the birth of a new scientific field, the **Biometeorology**. It is a combination of many scientific disciplines, especially Meteorology, Medicine and Biology.

In summary, Biometeorology investigates the direct and indirect influence of atmospheric conditions on humans and other living organisms.

It has several branches, where one has tried to study intensely the change effects that occur in weather and climate on human health, in long and short times, known as Human Biometeorology. The main studies have been published containing results from the 1960's.

According TROMP (1980)¹ is possible to understand some aspects that relate meteorological elements and human health. An atmosphere with low relative humidity is an environment conducive to the development of influenza virus (*flu virus*). Moreover, the increase in humidity and rainfall does grow number of catarrh cases and some types of virus.

¹ TROMP, S.W. Biometeorology: The Impact of the Weather and Climate on Human and Their Environment (Animals and Plants). L.C. Thomas, Heyden & Son, 1980.

SENSITIVITY TO THE WEATHER CONDITION



In one form or another, the weather influence us all, but only rarely perceive. The more harsh goes atmospheric conditions, more attention should be devoted. Some of the more impressive to us are the fall of hail and storms, prolonged droughts and excessive heat waves or intense cold.

Since ancient times believed that the weather changes have a direct influence on human health. In old medical literature mentions is sometimes called as "pain climate". It say, for example, that some people begin to complain of sharp pain and other painful sensations one or two days before the arrival of a cold front (wet weather).

Famous people from past centuries were among the so-called "sensible climate". Philosophers, scientists, statesmen, writers and brilliant artists felt that their creative ability was influenced by weather condition. These include men like Columbus, Dante, Goethe, Humboldt, Leonardo da Vinci, Luther, Mozart, Michelangelo and Napoleon.

Naturally, also the science has focused on this issue, especially Biometeorology, which has been concerned, over all, since last time, on influence of the meteorological conditions in our body.

So far not yet found a satisfactory explanation for the biological influence of the weather. This is related first and foremost with the fact that each individual has its own pattern of reactions, which, moreover, is modified in many cases lifelong. Moreover, it is extremely difficult to separate weather influence of many other environmental influences to which ones we are continually exposed. Factors professional or family may be harmful to our health much more than weather. Furthermore, the influence of weather is not always harmful.

All People React to Weather

Weather alone not causes disease. At most, it can aggravate an indisposition or a disease already latent in the body, especially in frail people. Although everyone reacts to the weather, an organism cannot neutralize certain unpleasant influences of atmospheric phenomena. If this influence is not balanced, not slow to make felt signs of climate sensitivity. It looks climate hypersensitivity when the reaction is so strong that worsen the symptoms of acute or latent diseases.

The sensitivity to meteorological conditions can manifest in the form of various ailments. The most common is headache, often associated with a state of fatigue. But there are other typical manifestations such as irritability, difficulty concentration and even sleep disorders. It also points of agreement that the seasons influence the onset of certain diseases.

The allergists are well aware that bronchial asthma, allergic rhinitis and other diseases of the respiratory system have their high points in the spring and autumn, probably due to greater abundance of allergens – pollen, leaf debris, dust – those times of the year.

However no known allergic causes, such as gastritis and peptic ulcers, and nervous system diseases (such as affective psychoses), with crises of severe depression or euphoria, also have irritation in spring or autumn.

Regarding to diseases that can be held in individuals with hypersensitivity meteorological, include, in addition to cardiovascular disorders, thrombosis, strokes and cramps. This also applies to several respiratory diseases, influenza infections and asthmatic diseases.



INCREASE THE NUMBER OF PEOPLE SENSITIVE TO THE WEATHER STATE

After these considerations, you might think that the sensitivity to weather is not as negative as expected. We are reminded, after all, often to the fact that our body to be weakened and lost its disease resistance.

The person affected thereby has the possibility to protect your body from which, of course, modify your lifestyle. In practice, this rarely happens, when there is the considerable increase in sensitivity to weather over the past 50 years. This has become a barometer of ill health of the inhabitants of various countries.

While in 1950, at Europe, only between 10 and 20% of residents complained of ailments associated with the weather, reached up to 30% in 1970. However, in the late 70's almost 50% of the population showed signs of sensitivity to weather conditions. Currently, this sensitivity is increasingly growing due to our habits of life, especially due to environmental pollution.

A study conducted in 1978 at Freiburg, Germany, confirmed the old belief that women at any age, is more susceptible to weather changes than men. While more than half of women surveyed said that was sensitive to atmospheric changes, only a third of the men were believed affected the same way. The study also revealed that, with age also increases the sensitivity to the weather. But there is also that neither the young escape these influences

One way to Unhealthy Lifestyle

The alarming increase of individuals sensitive to weather conditions in all age groups is necessarily the cause. Although not know among the phenomena, our unhealthy way of life is largely responsible for this fact.

One of the main reasons for this increase is our penchant for a sedentary lifestyle. Much of today's population suffers from lack of exercise, mainly due to advances in modern technology, which, with its numerous innovations, has facilitated extraordinary our life.

Medical groups contend that the lack of physical exercise is directly or indirectly, causing about 30% of the diseases. It seems clear that contributes to the influences of the weather is felt as aches or ailments.

The same happens with another consequence of our modern civilization. Whether at home or at work, we are constantly deprived, over the years, of the meteorological influences of nature. The temperature outside is considered unpleasant as soon as we move away from the values of the places where we work or reside. In many of us, the natural thermoregulation of the body is affected, at least in certain periods.

An organism that does not regularly expose to the natural stimuli of heat and cold no longer fits so well to weather influences. In contrast, those people who work outdoors daily, exposing the body to weather, preserves your natural resistance and react only to extreme variations of weather.

High Heat is Debilitating

The new habits acquired by man in recent decades can join different way to design the holiday. Previously, we escaped from the intense summer heat by choosing places that allow a home cool climate. Today, by contrast, people leaving for the beaches along the coast, despite doctors' warnings against the dangers of stifling heat and the dangers of exposure to solar radiation.

Those responsible are not only the seat of a tan in the sun, but also the alteration of individual sensitivity to heat. While old people were content with a temperature of 19 °C in their homes, today many people just feel good with a temperature of 23 to 25 °C. That is, the threshold of welfare rose sharply while lowered our resistance.

Thus, it is perfectly understandable desire to want sun and warmth, while decreases our resistance to the cooling, and other attacks. Add also the fact that is impossible to get the body to adapt to warmer climates in the short time of vacations. So, this change can lead to what is called of *climatic stress*.

Worst Air Quality

An entirely different question from ailments due to weather, or rather, to the characteristics of the environment, lies in the degradation of air quality. This danger must be taken very seriously, although the individual alone can do little or nothing to diminish it: we are forced to breathe the air around us with few or many harmful elements.

The effects of air pollution are felt not only in the vegetation, through acid rain, for example, but also on human health, although the relationship between cause and effect has not yet been satisfactorily explained.

According to a U.S. study, acid rain is responsible not only for the destruction of forests, like the death of approximately 50,000 people annually. Leaving aside these numbers, hardly verifiable, there is no doubt that the worsening air pollution causes an increase in respiratory and cardiovascular diseases.

The most extreme form of pollution is the dreaded *smog* (word consists of the terms *smoke* and *fog*). It is an increasingly visible phenomenon in large urban areas.



Smog is formed normally in situations of thermal inversions. Due to the strong cooling of the soil on cold nights without cloud cover or wind, the air becomes extremely cold near the surface.

In these conditions, the vertical movements of air are practically prevented, since the warm air, less dense, is superimposed on the cold air, heavier, and the concentration of harmful components (SO₂, CO₂, CO, ozone, secondary aerosols) and other particles released by industries and automobile exhausts increase progressively in a thick layer of air near the ground, where the fog is also able to form.

If *smog* is too thick, much of the solar radiation is prevented from reaching the ground, and these conditions may continue for several days.

It is proven that in cities where there is *smog*, inhabitants of the downtowns, as well as older or people with cardiovascular disease are at greater risk. The knowledge gained on weather sensitivity have a common denominator – in end analysis, the causes were due to modern civilization. The progress, if not driven carefully thought out and rational ways, becomes a sort of boomerang to our health. We must now do something to protect ourselves from its harmful effects.

HOW WEATHER AFFECT US?



The atmosphere, where weather phenomena occur leaving many stimuli that are captured and assimilated by human sensory organs. Even when weather conditions do not suffer major changes, temperature, humidity and atmospheric electricity, as well as wind speed, range, as is known, during the 24-hour day. These oscillations become more evident as unstable weather.

Each meteorological element that changes acts as a stimulus that is transmitted by neurovegetative system. It is for this, according to the intensity and succession of impulses, trigger reactions required when aiming to generate an internal balance.

Our body reacts to cold by constricting the blood vessels in our skin and around the edges of our body. As a result, our heart has to do more work to do to pass through narrow blood vessels. This puts a strain on a weakened or damaged heart.



A significant decrease in pressure causes an expansion of air in isolated body cavities and membranes of fluids. So, are then put on pressure inflamed or injured tissues in joints or muscles causing increasing pain. Some of us have experienced this phenomenon when we travel by airplane and the pressure decreases inside the aircraft during takeoff.

The human body dissipates energy by varying the rate and intensity of blood circulation, losing water through the skin and sweat glands. To cool down, your heart starts pumping more blood, blood vessels dilate to handle the increased flow, and bundles of tiny capillaries toward the upper layers of skin are put into action.

The blood circulates closer to the skin surface, allowing the energy loss as heat to the cooler atmosphere. At the same time, water diffuses through the skin as transpiration. Skin controls ~90% of the energy dissipation function of the body. Sweating, by itself, does not cool the body unless if water is removed by evaporation, and high humidity retard evaporation.

Under conditions of high temperature and relative humidity, the body needs to maintain the temperature inside at 37 °C. The heart is pumping a torrent of blood through dilated blood vessels; sweat glands release fluid, including essential dissolved chemicals, like sodium chloride on skin surface.

When energy intake exceeds the level that body can remove, or when body can not compensate loss of fluids and salts through transpiration, the body internal temperature begins to rise and illnesses related to heat can develop.

Mortality rates can increase markedly as a result of heat waves, with maximum occur 1-2 days after the day on which daily maximum temperature was reached, i.e., there is a delay of 1-2 days between higher temperatures and maximum mortality rate.

The illness (heat stroke, heat exhaustion, etc.) can occur in healthy people exposed to or with hyper-sensitivity to heat. However, much of the excess deaths that occur during heat waves are mainly due to other diseases in which heat stress anticipates death. Children, older and sick people, particularly those with circulatory problems, are main risk groups during excessive heat.

Many of us are sensitive to weather changes and pain that we feel may be caused by irritation of nerve endings as a result of sudden changes in weather conditions. Bones and muscles have different densities and expand or contract unevenly during variations in temperature and humidity can increase the pain that felt in muscles and joints inflamed or injured.

Heat waves² seem to have a greater impact on mortality than cold episodes. For example, at the 2003 summer, 180 people died in Paris (France) in one day as a result of abnormally high temperatures. Thousands of people died during heat wave of this summer worldwide.



Air humidity has a significant impact on mortality. As higher as humid, it is more difficult for our body to lose energy as heat through sweating, and this result in additional warming.

² An episode extreme hot or heat wave is a period when was recorded excessive temperature day or night in association with high moisture content of air to the place or time of year.

Climate Effects in the Health Dry Air

Sensitive people to the weather are often irritated a day or two before a change of the weather and are usually in a miserable state when the arrival of a front. The U.S. hospitals record a greater number of births during this period and an increase in headaches and migraines.

People suffering from rheumatism fear the arrival of cold and wet weather while the dry and dusty wind from interior, before the arrival of a front, causes asthma or exacerbates symptoms and hay fever worse.



The dry winds from interior before arrival of the fronts are called the *Foehn* at the Alpine regions of Central Europe and *Chinook* and *Santa Ana* at the regions of the Rocky Mountains of Canada and USA. Some Swiss courts to allow consider the negative effects of these winds as mitigating factor in some crimes. The University of *Calgary* in Canada conducted studies that corroborate with claims of many migraine sufferers of the *Chinook* would be responsible for this effect.

Weather – A Problem of Nerves?



For a better understanding of the subject, one must recall that the neurovegetative system is composed of two systems. One, the sympathetic nervous system, has an activating action on vital functions that require expenditure of energy in our body; the other, parasympathetic system has a predominant action at home, anabolism, replenishing the energy spent. While the meteorological stimuli do not exceed certain threshold are not dangerous to humans. However, when are exceeded the limits tolerable by organism, its capacity for adjustment, there is suffering.

Healthy people without, any organic disease, feel only a slight indisposition more or less indefinitely. The same is not true for sick people, for example, hypertensive heart disease, chronic bronchitis, renal patients, etc. In these cases the meteorological influences can aggravate the health condition and mention of a genuine *stress* climate with negative consequences.

The path that goes from stimulus to reaction is understandable with the following example. Let us look at what happens when we take a "shower". We ran the taps of warm and cold water as needed to obtain water at the desired temperature. When the installation works well, there is no problem, because it regulates with ease. However, if pipes or faucets are rusty or impregnated with dirt, becomes more difficult to regulate the water temperature.

The same applies to the human body. In fact, sometimes the weather changes suddenly, requiring complex adjustments, controlled by the neurovegetative system in order to keep the internal balance.

For example, during warm weather there is great heat loss through sweating, vasodilation and increase respiratory rate, in order to maintain stable body temperature. This excessive sweating, with major losses of fluids, requires a greater intake of water. Evidently, this rebalancing is much more complex than we have outlined here schematically.

Conversely, in cold weather there is a whole set of complex mechanisms that involve circulation, breathing, cardiac work, renal function, quality of food caloric intake, amount of fluid drunk, etc. so that the body prevents heat loss and find other energy sources to cope in the cold, keeping the body temperature within normal parameters. All this set of adjustment, involving the whole body, is "automatically" controlled by the neurovegetative system.

There are more sensitive people to the meteorological changes, in which the adaptation of the body becomes more difficulty. Something similar happens with the call asthenia³ or fatigue spring. Over a few months, the body has adapted to the climatic conditions in winter: the shorter day length and reduced solar radiation, coupled with long periods of cold and cloudy weather, became scarce moments spent outdoors and put the individual in defensive attitude towards the environment (without access to vitamin D from the Sun). And now that spring has to pull it out of this discouragement. Until the body adapts it will have to endure feelings of tiredness and weakness.



³ It is a term used in medicine to designate an organic weakness, but without real loss of muscle strength.

WARM DAYS AFFECT YOUR BODY

MIGRAINE - Relating to the dry weather and movement of hot air.

Any sudden change in temperature can cause a crisis. Some doctors suggest keeping a diary to anticipate climate change, providing preventive medication type. Migraine sufferers usually is sensitive to glare and intensity of sunlight. Moreover, with increased sweating, there is a decrease in the body of water which can also cause headache.



HEART DISEASES - High temperatures are related to increased mortality from heart disease. Exposed to heat, the body needs to regulate internal temperature. To keep at healthy levels, increases blood flow (to take the heat for the body surface) causing transpiration. However, this heat loss decreases when the temperature/humidity increases. To compensate, the body promotes increased circulation, which requires increased heart rate and blood volume. If this organic ability is impaired by preexisting cardiovascular pathology, there is the possibility of triggering a crisis.

MULTIPLE SCLEROSIS (MS) - The heat and high humidity can aggravate the symptoms of those suffering with multiple sclerosis (loss of coordination, balance, blurred vision, impaired speech and fatigue). Experts believe that this is because the elevation of body temperature decreases the capacity of transmission of impulses which occurs through nerve fibers protected by myelin (membrane surrounding the nerves). Who has MS has also decreased or absent myelin, which aggravates the symptoms of the disease.

BLOOD PRESSURE AND HEAT SYNCOPE - A flaw in the circulation that keeps high blood pressure, with consequent transmission of oxygen to the brain, can lead to heat stroke. When the heart is enabled (e.g. during exercise), increases blood pressure and body temperature can rise, progress to a cardiovascular stress that leads to exhaustion. In such cases, if the activity is not disrupted, the body temperature can reach above 40 °C, damaging cell structures and the system of thermoregulation at high risk of mortality. This usually happens with people who keep exercising, even if they do not feel so well.

(Text Extracted from Viva Saude Magazine, Issue 68, 2008).

Consequences of Weather State

The causes of weather influences on body are far from being totally understood. However, one thing is certain: There is a relationship between different meteorological situations and the emergence of certain diseases.

To understand what we mean by this, we need to take a bit of Meteorology. In periods of anticyclonic weather warm and humid succeed, for example, frontal depressions. Since the fronts, regions of contact between air masses of different thermal and hygrometric characteristics (relating to air humidity), the changes of weather state are frequent and sudden, as its effects on individual welfare.



When air warm flows over colder air these clouds appear, called Cirrus, announcing a weather change. It is then that people, more sensitive feel the first discomforts.

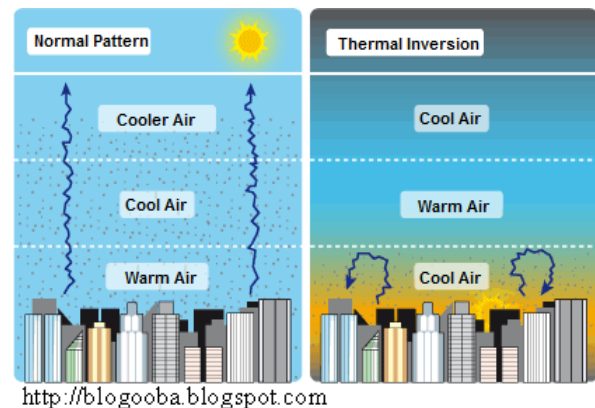
The biological load (biotropism) stronger lies with arrival of warm front, when the first high clouds appear, a sign that a air mass of warm and moist approaches. The cold front is followed by cold weather. Although the number of ailments and diseases area lower as compared to the previous case, sensitive people also do not appreciate the much cold weather, often with much cold and with downpours. At this stage, the diseases most prevalent are the spastics⁴ such as cramping and angina pectoris.

Rheumatic also suffer under these meteorological conditions because is proven to have a lower capacity of thermal regulation. In contract, for healthy people the arrival of the masses of fresh air has an invigorating and stimulating effect.

⁴ Medical term "spastic" is used to describe cerebral palsy and more recently gastrointestinal disorders and heart diseases.

The most pleasing meteorological conditions resulting from the combination of the following factors: Situations anticyclone (high pressure), no wind, little humidity and high temperature pleasant.

However, it may happen that during anticyclone periods there are bioclimatic conditions unpleasant in valley bottoms or in closed depressions; those translate into highest summer temperatures summer or thermal inversions (image below) contribute to the formation of mist and fog and an abnormal concentration of pollutants (*smog*). These attack the mucous membranes, causing irritation and catarrh.



This phenomenon because its characteristic of make potent air pollution, affects directly human health. Diseases linked to pollution, like asthma and bronchitis affects mostly children. Bronchi and alveoli, angered by pollution, become more suscetible to others diseases of the respiratory system. The eye irritation is also common in ambient highly polluted due to thermal inversion.

BIOTROPIC FACTOR



By today yet not fully clarified what are the meteorological factors that influence our health indeed. There is a relationship confirmed, for example, between atmospheric pollution and respiratory diseases and from stifling heat and circulatory disorders. These correlations are verifiable, especially because is possible to accomplish comparative studies on "climate chamber" closed.



In some people the ailments manifest sometimes before the weather change, being this "pre-sensitivity" one of the fundamental problems of Biometeorology. And the term "pre-sensitivity" cannot tell that is entirely appropriate, because the truth is that just feel changes in status health when occurs a change in atmosphere. That this weather change be or not perceptible, is of minor importance.

The Search for Susceptibility Agents

The influences, which this case are being felt on individuals, are undoubtedly related to atmospheric phenomena that precede the changes of weather. Also, enter our homes without modification because the pre-sensitivity manifests both within and abroad.

Thus, there are only two influences that may act as triggers of the sensitivity to the weather state:

- (i) Variations of electromagnetic field,
- (ii) Abrupt fluctuations in atmospheric pressure.

Among the most enduring electric meteorological influences, there are electromagnetic radiations of great wavelength originating in lightning and other electric discharges in the atmosphere. These radiations can be felt, especially when passage of a cold front (sometimes associated with thunderstorms), but has low importance in air mass subsidence (e.g. *Föhn*).



These radiations trigger biological reactions that are likely to influence the metabolism and cell membranes and can cause variations in pulsation, blood pressure, composition and time of blood coagulation.

BIOMETEOROLOGICAL COMFORT INDEX



The human beings react differently to the weather and climate extreme conditions. Their ability to adapt to adverse local depends on skill, seeking the most appropriated places for their survival.

For this reason, several biometeorological indexes were developed with the aim to classify the environmental comfort felt by all living beings (plants, animals and humans). The calculation of these indexes involves daily meteorological variables observed at meteorological stations which ones, in long time, featuring local climate, evidencing the daily changes of weather that has an influence on human behavior.

Thus, the variables that most contribute to the physiological, behavioral and biological changes are air temperature, relative humidity, wind speed and solar radiation.

The development of empiric formulas, which express in numeric term the sensation of environmental comfort, shows how some meteorological elements can change or influence the hormonal or chemical balance, according to the seasons.

Study by ASSIS and CAMARGO (2002)⁵ mentioned the sensation matter of the environmental comfort in Pelotas (Rio Grande do Sul State) using a formulation for biometeorological index which took into account the air temperature and dew point. To evaluate the results were used technique of the quantiles and seasonal analysis of that index.

⁵ ASSIS, S.V.; CAMARGO, C. G., 2002. Avaliação Bioclimática da Cidade de Pelotas, RS. Revista de estudos ambientais, Blumenau, V. 4, N. 2-3, Maio/Dez. 2002.

The seasonality showed that major discomfort is felt in the warm season (December to February), where 10 to 50% of the population felt uncomfortable, but the opposite in the cold season (June, July and August), when discomfort index did not pass 17°C. In cold temperate seasons (March, April and May) and warm (September, October and November) was not very great the discomfort, the indisposition was felt by 10% of the population, only in March.

The technique of quantile confirms what was presented in the seasonal analysis, which in warmer months, in 50% of the years studied (17 years) revealed that 10% of the population felt uncomfortable and in the colder months this feeling was low. In general, Pelotas city has a pleasing climate satisfactorily, with respect to high temperatures accompanied by high relative humidity in most of the year.

CLIMATE CHANGE AND HUMAN BIOMETEOROLOGY



The Climatology, through human bioclimatology, is a field study of public health concern. This interest became more important in the context of current discussions of global climate change. Some experts say that if they occur, could cause considerable health impacts of major portions of mankind, but quite distinct focus on Earth's surface.

In the tropical zone and the changes are less dramatic than those that occur in middle and high latitudes. In the tropics, it is believed that the parasitic diseases and find better conditions for its expansion, which will constitute a high risk compared to the vulnerability of the majority

Diseases like malaria and dengue, among others, may have expanded their space in latitude and altitude, involving a fairly high number of victims in the near future.

PREVENTION TO METEOROLOGICAL SENSITIVITY



The meteorological sensitivity translates into many people for a reduced capacity for adaptation to various environmental stimuli. We must attack the evil by root, determining the various modes of individual behavior that led to this state of affairs. In most cases, these are habits of many years that are not consistent with a healthy lifestyle and weaken the body in relation to meteorological stimuli.

One of the most important causes is the absolute lack of exercise. Whether a sport or gymnastics practice that, whether it's a foot race, each one choose what suits you, is important because, ultimately, to exercise the body.

It is also clear that an integral part of healthy living to reduce the consumption of alcohol and tobacco and a reasonable diet. People with excess weight naturally suffer more ailments caused by meteorological influences that people of normal weight.

The house should not be exaggerated heated, and the divisions - especially the bedrooms - should be kept cooler for the body to feel the temperature changes necessary for its thermoregulation. And in all circumstances the daily walk is one of the best preventive measures against the weather sensitivity.



Who lives in a big city with a particularly oppressive climate should at least on days of smog, haze or stifling heat, absent from the place of residence or work. Even if only for a weekend, a ride in the mountains or the seaside already provides relief. When planning vacation, the choice of climate should be made at the convenience of each. Especially the elderly and weak and susceptible should pay more attention to bioclimatic conditions.

In fact, a favorable bioclimate is important to their well-being, as taught in the climatotherapy. But you must have patience because the therapeutic effects of climate in general show only after weeks or even months. It follows that we can tackle just about weather sensitivity with our own weapons. In short, the weather did not suppress sensitivity to miracle cures, but with a consciously healthy lifestyle.

VACATION AND CLIMATOTHERAPY CONDITIONS

Who thinks about relaxing vacation should choose a suitable location, taking into account their climatotherapy conditions (exposure to climate conditions). The vacation can give a tired or sick person the opportunity to exchange, at least for some time, polluted climate of their place of residence or work, the other more healthy.

This situation does not happen, but when summer is in full holiday regions are even warmer. Rather, it is always advisable to stay in a massif or mountain, called regions with good air.

If a person lives in a place where winter is severe, there is a danger that, when he returned, the body does not adapt to the cold and humidity, and the consequences are colds and flu. Rather, who moves to a country in winter colder than you also run the risk of disease caused, directly or indirectly, by low temperature.

A Progressive Acclimatization



The person who travels by plane to a region with a completely different climate exposes himself to a severe test.

The success of relaxed vacation depends not only of the place climate where are past but also the greater or less difference between this and climate where you live. Climate change may raise some illnesses, particularly in the early days of vacation. The most typical symptoms are headaches and sleep disturbances.

Just like a climatotherapy also on vacation should start with to stay calm and relaxation, and only gradually shift to the practice of dosed physical exercises. For this reason, the holiday period should not be too short because recovery extends through several phases, and the process of adaptation of the body hardly lasts less than two weeks.

In addition, the ideal vacation spot should be chosen taking into account the seasons, which in most cases, impossible. As we know, there are at all latitudes, except for certain areas intertropical (always warm and humid) seasons with the climatic characteristics of their own. This means that almost all places can offer this or that time of year, weather conditions that constitute an assault to the body.

Therefore, the set of meteorological phenomena is an inherent part of our daily lives and adjust to the demand for decisions, regardless of the type of society. It is necessary that society increasingly aware of the potential benefits and applications of meteorology. It is this connection with everyday life that made us develop and discuss this important issue that blends meteorological elements, health and quality of urban life.



GLOBAL CLIMATE CHANGE AND HEALTH

There are several ways in which global climate change can affect the health of the human community. Generally is thought, immediately, that "global warming" - main mechanism of climate change - will have direct effects on body physiology and human welfare because of increased temperature. While this is correct, it is assumed that this is not the main aspect of climate change in importance at public health: a series of social and environmental processes, resulting from global warming and its consequences for the climate may affect disease incidence and patterns of mortality in many parts of the world.

We can distinguish in this respect, some basic mechanisms, namely:

- i) Direct effects caused by altered patterns of climate variability, especially so-called "extreme events": hurricanes, storms, floods, droughts and heat waves. Can affect health directly, causing physical and psychological trauma, and serious economic losses.
- ii) Indirect effects associated to environmental changes resulting from climate change, causing water shortages, decline in food production, worsening air pollution and migration of "environmental refugees". All these processes have important impacts on health.
- iii) Effects of climate oscillations (variations in temperature, rainfall etc.) on agents and vectors of endemic infectious diseases such as dengue fever, malaria, leishmaniasis, diarrhea and other infectious diseases. Climatic factors can accelerate the infectious cycle and to facilitate spatial dispersal of microbial agents and their transmitters.

Recent weather events have come to show that all countries and regions of the world, even the developed countries, can be considered more or less vulnerable to the consequences of extreme weather events that may occur with greater intensity, as a result of global climate change. Deaths caused by Hurricane Katrina, U.S. in 2005, and heat wave that struck Europe at the 2003 summer, killing 30,000 people, are good examples.

We can say that Brazil is a country very vulnerable to the effects of weather, for several reasons, including:

- 1) Due to its vast territory, it has a particularly sensitive area such as semi-arid region, occupying already limited by drought. Any increases in average temperature and/or reduction of rainfall and humidity will make living even more difficult if not impossible. Biomes relatively well preserved, as Amazon rainforest and the Pantanal, contain natural foci of infectious diseases with animal hosts, which may be important changes in its dynamics and distribution.
- 2) Presents a great population with little access to basic goods and services, including health. It is known that the populations most vulnerable to the effects of climate are those who, for reasons of social and environmental, are more exposed to climate hazards, and have less capacity to protect themselves and respond to adverse impacts.
- 3) The existence, in its territory, of several endemic infectious diseases sensitive to climate. They may have changed their cycles, encouraging both increased as decrease of its implications for variations in temperature and humidity, among other factors. There is also the possibility of spatial redistribution, as consequence of the regional demographic phenomena. This was the case of outbreaks of kala-azar (visceral leishmaniasis) observed at Northeast cities, beginning in the 1980s and 1990s, consequent to massive rural-urban migration, driven by prolonged droughts.
- 4) High concentration of population in urban areas vulnerable to climate risks, such as floods, landslides and worsening air pollution. They are well known morbidity and mortality associated with summer rains in several Brazilian cities, phenomena that can repeat, most dramatically, by global warming.

A study involving the analysis of current vulnerability of the population to health impacts of climate was developed at the national level. With the combination of economic indicators, indicators related to the incidence of endemic diseases sensitive to climate and also climatic indicators, were obtained vulnerability indices for all Brazil. The States that showed highest levels of vulnerability are located in the North and Northeast, especially. This was due to a combination of low socioeconomic indicators (income, infant mortality, education, etc.), with existence of high levels of endemic diseases in a geographic substrate characterized by semi-aridity and recurrent droughts.

To reduce these negative impacts is necessary for the State and society to prepare properly. In addition to the social improvements required and expected - regardless of climate change - such as increased employment and income, expansion of infrastructure, sanitation and access to good education and also a better effectiveness of medical care and disease control in general, some specific adaptive measures may be needed. (Paper of *Ulisses E. C. Confalonieri*, published at *ComCiência Magazine/SBPC*, 2007/03/10).



You are Sensitive to Weather – Yes or No?

Who is not safe to join the group sensitive to the weather can check by answering the questions in this test. The answers should be given spontaneously, in the end, add up the points.

Question	Yes	No
1. You often feel tired for no apparent reason?	3	1
2. You feel sometimes pain that manifest themselves suddenly and disappear within a few hours?	3	1
3. Do you suffer from sudden and inexplicable mood swings?	2	0
4. You sense a weather change with 6 to 18 hours in advance?	5	0
5. You sense a weather change over two days in advance?	0	4
6. Do you suffer with the stifling warm?	2	1
7. And with the fog extended?	2	1
8. You have low blood pressure?	3	1
9. You sit negatively influenced in his state of health when goes through quickly by car or funicular regions at different altitudes?	2	1
10. You sit relaxed after summer vacation on a beach?	0	2
11. There are seasons in which you feel worse?	2	1
12. You usually hear or read the weather report?	2	1

Test Result:

8 - 14	No signs of climate sensitivity.
15 - 21	The weather affects your health. Also their willingness and ability to work suffer with climate oscillations.

TO KNOW MORE:

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INFORMATION SITES ABOUT BIOMETEOROLOGY AND HEALTH:

Understand how climate affects the Spreading of Swine Flu (H1N1):

<http://www.estadao.com.br/noticias/geral,saiba-mais-como-o-clima-afeta-a-difusao-da-gripe,361773,0.htm>

FIOCRUZ: New Methodology evaluates the Relationship between Climate and Health:

<http://midiaemeioambiente.blogspot.com/2007/09/nova-metodologia-avalia-as-relaes-entre.html>

RADIS: Monitoring of the Relationship between Climate and Health:

<http://www4.ensp.fiocruz.br/radis/93/04.html>

Weather can leave you sick? http://www.deolhonomar.com.br/frames_curiosidades.htm

Nutrition: Get you ready for Summer:

<http://revistavivasaude.uol.com.br/saude-nutricao/68/imprime117278.asp>

Brazil Environment: Study shows that pollution causes 70% of hospital admissions for respiratory disease in Sao Paulo: <http://noticias.ambientebrasil.com.br/?p=56126>

FAPESP: More heart attacks in the cold:

<http://www.agencia.fapesp.br/materia/12610/divulgacao-cientifica/mais-infartos-no-frio.htm>

Excellent Reasons for Navigate in the Net

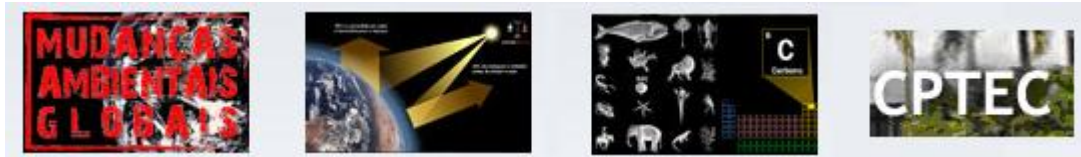
Starting from a suggestion of our reader Raul Fritz B. Teixeira, we are going to publish links for websites (mostly Brazilian, but also foreigners), not professional (personal, not entailed to official institutions) and linked to the Meteorology science. By the images beauty that contains these websites can even to awake the curiosity and students' attention and public in general by the meteorological science. This way, we want to encourage to whom has a website of this kind invited you to announce your address in Cirrus.



1 <http://www.freewebs.com/clouds-air>

He created this website why loves to observe the sky along the day (sunset scenes, for example). He also considers fantastic all that with light and color at atmosphere (atmospheric optics) and Moon observation, planets and stars at night fascinates him. Clouds (its forms and colors) are very interesting for him not only observing them through the satellite images, but also in the camera lenses that he owns and clicks to obtain the best images.

It is an amateur website with information and very interesting images, owning clouds varied kind photos and atmospheric phenomena such as iridescent clouds, solar halos, etc. According to him, the nature observation animates him every time to explore and to obtain sensational images seen in the planetarium and celestial atmosphere. Like the own author mentions, he is a site to find images on clouds, atmospheric optics and sky scenes (day and night)



2 <http://videoseducacionais.cptec.inpe.br/>

CPTEC/INPE made available in its website the educational videos for its users. The use is free, not needing purchase or use license. The several educational materials had several institutions financial aid as: São Paulo Support Research Foundation (FAPESP), Support to the Culture, Education and Social Promotion (VITAE), Brazilian Space Agency (AEB) by the project AEB School, and INPE.

The contents developed in the several projects, besides being a auxiliary didactic material, had as goal motivate students to the research and search new knowledges involving environment and atmospheric sciences through the Internet use and Multimedia. The boarded topics were treated with a context multidisciplinary allowing that professors of several disciplines use in their courses.

The available educational videos are: (i) Environment and Atmospheric Sciences, (ii) Global Environmental Changes, and (iii) Satellites and its Subsystems. These videos can be used by students, teachers, professional and curious at the scientific knowledge.

Núcleo de Meteorologia e Hidrologia - Universidade do Estado do Amazonas



3 <http://remethi.org/site/>

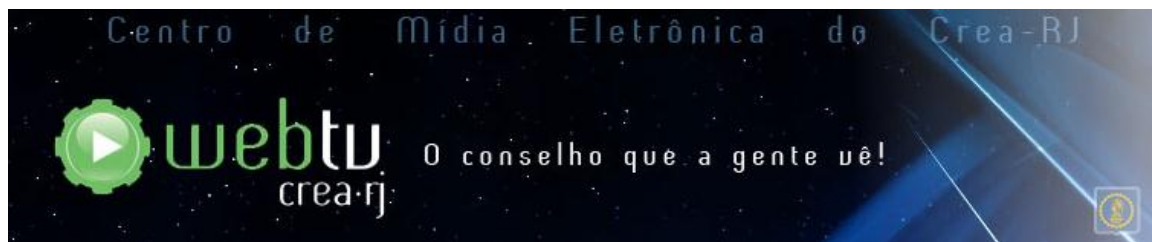
Amazonas Network of Meteorology and Hydrology (REMETHI-AM) was created officially through Project submitted to the Edital MCT/FINEP/AT-13/2006, whose approval made possible the resources use of the Federal Government through Study and Project Financial Agency (FINEP).

Its working main strategy is in the partnerships establishment pledged with goals of network and its objective are:

- Thematic information exchange;
- Strengthen technical collaboration between Amazonas different Entities and region;
- Build support instruments to the decision by meteorological and hydrological information users, detailing them in the State Scale; and
- Understand and translate the complexity of the meteorological and hydrological information, nowadays existing, generating subsidies to the state entities for the decision assumption.

This network integrates and articulates national (mostly with state nuclei of Meteorology and Hydrology) and internationally (Institut of recherche pour le Développement - IRD) aiming meet demand by meteorological information of the population in areas as: Agriculture, cattleman, energy, hydric resources, air, marine and terrestrial transport, public health and civil defense, at Amazonas State scale.

The Network operation is made by Meteorology and Hydrology Nucleus of Superior Studies of the Humid Tropic Center of the State Amazonas University (NMH/CESTU-UEA). Nowadays the network members are: Eletronorte, NIEMA/UFAM, CNPq, CTHidro, ANA, IRD, UEA, PIATAM, CPRM and LBA and come growing conforms at initiative consolidates.



4 <http://app.crea-rj.org.br/cme/>

Electronic Media Center of the Rio de Janeiro Regional Council of Engineering, Architecture and Agronomy (CREA-RJ), through the Web-TV produced a series of programs "Building the Knowledge", in several chapters about like Meteorology and professionals work. Web CREA-RJ TV was idealized with goal to produce institutional material, journalistic coverage, besides produce distance learning and to transmit meetings in real time.

The programs maids related to Meteorology were: (i) Learn about the Meteorology Sector of Electric Power Company Furnas and (ii) Know what Aeronautical Meteorology is. To access the videos, you should click in "Programs" and then to choose item "Building the Knowledge".

Beyond of these videos about Meteorology, at website also can find other in several themes linked to the environment, energy, architecture, among others.



5 <http://zappiens.br>

The Internet Committee Manager in Brazil (CGI.br), in partnership with National Archive, São Paulo University (USP), National Network of Teaching and Research (RNP) and National Scientific Computation Foundation (FCCN), Portugal, launched the Zappiens Portal.

It is a videos distribution free service with scientific, educational, artistic and cultural content at Portuguese language. The Portal offers opportunity of gathering and to turn public rare and exclusive heaps, that can be used as source for study and research. "With free access, the goal is to disseminate culture, scientific and technological information between several communities", said Henrique Faulhaber, adviser of the CGI.br.

The initiative is fruit of the digital contents work group of CGI.br who identified the need to videos repositories implementation to use public, so much for research as for the teaching in general. Zappiens.br has a select search system, which works so much by means of key-words as tags, facilitating of the contents organization. Moreover, there is no size limit for the video files.

Initially, the prospects will find available for material consultation of CGI.br, USP and National Archive, like Cine-newspapers – news broadcasted in Brazilian movies between 1930's and 1970's. The tool will be fomented by means of agreements with several organizations. "Zappiens.br is open and in search of cooperation new partnerships and agreements with public institutions, universities and companies that have heaps in video", said Faulhaber.



Centro de Pesquisas, Desenvolvimento e
Produção de Imunobiológicos, Medicamentos,
Insumos e Tecnologia para Saúde

Desde 1919



6 <http://www.ivb.rj.gov.br/>

In commemoration at the 145 age in 2010, Brazil Vital Institute (IVB) produced a series of educational videos, destined to the students of the public network, come in 7 and 17 years. Result of more than one year of filming, the educational videos will be distributed at municipal and state schools, accompanied of a guide for teachers, contend explanations of how to work the subject of didactic form, by distinct age bands.

When ready, besides being at schools, IVB's Videos will be able to be watched via internet, by the institution website and by YouTube. The movies script is signed by Mônica Horta, and locution by the journalist Valéria Monteiro. "The short movies lift important questions, like deaths incidence by stung of snakes in Brazil, by region. One of our objective is to rescue the memory of Vital Brazil, since his discoveries had a great weight not only here, but abroad", tells Érico Vital Brazil, grandchild of scientist and president of the Vital Brazil House, in Campanha city, Minas Gerais.

They will be distributed two thousand kits, with 12 videos each. The project costs should stay around 200 thousand real, being 90 thousand real paid by Rio de Janeiro Support Research Agency (FAPERJ). The rest of the resource will come of IVB and Health and Civil Defense Secretariat of State Rio de Janeiro.

Autarchy of the Health and Civil Defense Secretariat, Brazil Vital Institute located at Niterói, is one of the 18 Brazilian official laboratories and one of the three serums vendors against the poison of venomous animals by the Health Ministry, that distributes them for whole Brazil.

The Pioneer of Medical Climatology in Brazil



"It Dust, Modest, It Snow, Pure: They Had Given A Little of Mud. In Puddle of Mud as in the Divine Sky, also passes the Moon".

Júlio Afrânio Peixoto (1876-1947)

This our honored was who better interpreted, as none another one, so deeply the relationship between climate, humanity, culture and medicine in Brazil. Furthermore, he was a multiple man, alienist, medical legal expert, politician, professor, literary critic, essayist, novelist, historian, academic and polemicist.

Biography of Afrânio Peixoto

On December 14, 1876, was born in Lençóis, in the Lavras Diamantinas at Bahia, Júlio Afrânio Peixoto. The picture shows the house where he was born and which nowadays is the Afrânio Peixoto Museum.

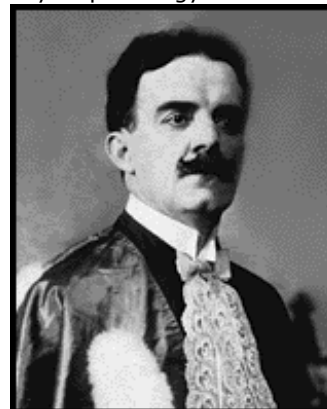
His parents were Captain Francisco Afrânio Peixoto and Ms. Virgínia de Moraes Peixoto. The father, Portuguese ancestry, came from Recôncavo Baiano and was diamond merchant, self-taught person, transmitted to the son the knowledge that gained throughout his life. Here in Bahia could not even imagine that in 1910 his son was elected to the Brazilian Academy of Letters in the chair of Euclides da Cunha.



House where Afrânio Peixoto was born in Lençóis/BA.

Due to the diamond exploration crisis, the family moved to Canavieiras city. Thus, Peixoto spent his childhood in the interior at Canavieiras (where exist a library and streets with his name), where he concluded primary school, beyond living deeply situations and landscapes that would influence his intellectual education and many of his novels.

In 1892 he joined at the Bahia Medicine Faculty, Salvador, and graduated in 1897. His inaugural thesis "*Epilepsy and Crime*" aroused great interest among scientists of Brazil and exterior. Prof. Isaías Paim in an article published in the journal *Brasiliense of Psychiatry* (1971) named Development of Forensic Psychopathology in Brazil, considers Afrânio Peixoto as "Founder of the Forensic Psychopathology in our Country".



Afrânio Peixoto in the official photo of his graduation in Medicine, 1897. Photo: www.biblio.com.br.



Doctor, Literary, Professor and Politician

In the Medicine Faculty of Bahia approached of Juliano Moreira and 1902 Juliano invites him to move to the country's capital, at the time, Rio de Janeiro, where he was Public Health overseer (1902) and Director of the National Hospital of Mentally (1904). His life, like so many other doctors, changed between practical clinic and the literary inclinations.

His premiere was given in literature within the atmosphere of symbolism, with publication, 1900, of the Mystic Rose Drama, curious and original drama in five acts, luxuriously printed in Leipzig (Germany), with a color for each act. The author himself disowned this workmanship, writing down, in the existing copy in the Library of Academy, the comment: "Incorrigible. Only the fire".

Between 1904 and 1906 he traveled for some European countries in order to improve knowledge in his specialty field, combining also the curiosity of art and tourism to the interest of the study. On this first trip by Europe he took knowledge, on board, the presence of the Alberto de Faria family, which would be part, seven years later, when he married with Frances Peixoto de Faria.

In 1906, he was submitted to tests of competition of the Medicine Faculty of Rio de Janeiro, and then was appointed as professor of the chairs Forensic Medical and Hygiene (1907), and assumed the position of extraordinary professor of the Faculty of Medicine (1911); Director of the Normal School of Rio de Janeiro (1915) and Director of Public Instruction of the Federal District in the following year.

When Euclides da Cunha (1909) died was Afrânio Peixoto who examined the body of the slain writer and signed the relevant finding. Held Chair No. 7 of the Brazilian Academy of Letters (ABL), which was elected on May 7, 1910, succeeding Euclides da Cunha; and Chair No. 2 of the Brazilian Academy of Philology, which he founded.

When he came to Rio de Janeiro, his thought was only to be a doctor, who both failed to tread the literature after publication of the Mystic Rose. His medical-legal-scientific workmanship augmented. The novel was an implication that author was taken due to his election for the ABL, for which he was chosen in absentia when he was in Egypt on his second trip abroad.

He started to write the novel "A Esfinge" (The Sphinx in english), what did in three months before the entrance on August 14th, 1911. Egypt inspired him the title and woof of the novel, the eternal conflict between man and woman that are wanted, transposed for the refined environment of the carioca society, with then traditional summering in Petrópolis, mundaneness conversations, treating of politics, stock Business, literary and artistic subjects and trips abroad. The novel, published in 1911, obtained an uncommon success and put the author in highlight position in the Brazilian fictionist gallery. In the novels regionalist trilogy Maria Bonita (1914), Fruta do Mato (1920) and Bugrinha (1922), perhaps his more famous novel. Among urban novels wrote "As Razões do Coração" (1925), "Uma Mulher como as Outras" (1928) and "Sinhazinha" (1929).

Endowed of fascinating personality, irradiating, exciting, besides being a fable great bookkeeper and an excellent lecturer, conquered people and auditoriums by the intelligent and charming word. Like criticism success and popular prestige, few writers equaled at that time to Afrânio Peixoto.

At the Academy he also had intense activity. He belonged to Magazine Editorship Commission (1911-1920); to the Bibliography Commission (1918) and to the Lexicography Commission (1920 and 1922). House President of the Machado de Assis, in 1923 promoted, next to the ambassador of France, Alexandre Conty, donation by the French government of the Petit Trianon palace, built for France's Exhibition in the Independence Centenary of Brazil. Still in 1923, he gave beginning to the Academy publications, in a collection that, in his homage, since 1931, has the Collection name Afrânio Peixoto.

Like essayist wrote important studies about Camões, Castro Alves and Euclides da Cunha. In 1941 visited his homeland, Bahia, after 30 years of absence and published 2 books: "Breviário da Bahia" (1945) and "Livro de Horas" (1947).

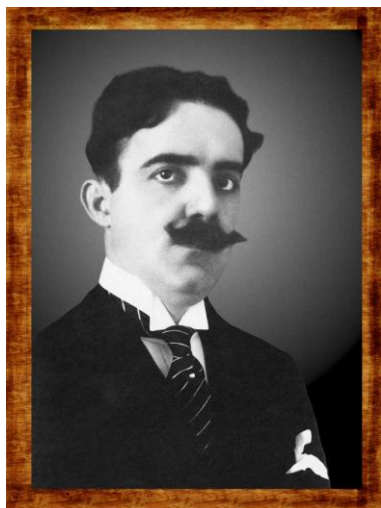
Beyond of these, he published workmanship of other authors and numerous books of medicine, history, speeches and forewords. Afrânio Peixoto tried to summarize in its biography his intense intellectual labor exercised in the cathedra and in the hundreds of workmanship that published in two verses: "He studied and Wrote, Nothing more happened Him".

He had a passage by politics when was chosen federal deputy by Bahia, staying in the at post from 1924 to 1930.

After this, he came back to the educational activity being professor of Education History of Education Institute of Rio de Janeiro (1932). In the mastership, he arrived to Rector of the Distrito Federal University (Rio de Janeiro), in 1935. After 40 years of considerable services to the new generation formation of his country, he retired.

He was member of the Historical and Geographical Institute Brazilian (IBGE), Sciences Academy of Lisbon; National Academy of Legal Medicine, Medicine Institute of Madrid and of other important institutions.

Afrânio Peixoto Contribution by Biometeorology



Of the first studies on Brazil's Climate in the middle of XIX Century, he was from the paradigms of wholesomeness, adaptation, hygiene and public health, that climatology gave its first steps towards the institutionalization as knowledge field.

Among doctors and hygienists Brazilian, no other interpreted so deeply the relationships between climate, humanity and culture how much Afrânio Peixoto. By the ensemble of his work, would not be exaggerated affirm that he has been the precursor of Geography and Medical Climatology in our country.

Professor of Rio de Janeiro Medicine Faculty, Peixoto was an ardent defender of the tropical world against detractors of which prejudice this environment, that divulged the "peoples natural" inferiority of the Torrid Zone.

Yet in 1907, was published one of his first papers that cared for the relation between climate and diseases in Brazil "Climate and Health".

In this paper, he thrills with possibilities to think the Brazil starting from internal solutions for overcoming of the Brazilian problems. In the foreword of his capital workmanship, the author's speech revealed the guns that he disposed, when trying to interpret the national reality of XX Century beginning, when he affirmed:

"Brazil is the unique great country, of occidental civilization, situated in the tropics. Therefore, not comparable to none of named 'cultured countries', tempered and cold. With India and Egypt would not want to seem... It has, because, right to think and to find its solutions, for the own problems: Brazilian solutions, for Brazilian problems. It is today the only colonial country', or of raw materials, that does not have metropolis, to protect: has, therefore, obligation of care of itself, searching own economic solutions, for the particular Brazilian problems. In the meditation, and in the current actions of these postulates, that imposes the climate, and the topography, and people, and education, is the happiness and even is national survival itself. Cannot be empty spaces such protests. To love, that is great, will forgive the vehemence that comes of the apprehensions... It cannot be bland, if is much love force".

While Belfort de Mattos and Henrique Morize (already cited in Cirrus previous issues), to the treated of the Brazilian climates, where defended the ideas that, even accepting the thesis of the geographical determinism, great part of the Brazilian territory (center-south) would be inside limits of sub-tropical and tempered climates, presenting "favorable climates" to the human and economic development and, thus, in this portion of our territory would be free of these limitations of climatic order, Peixoto, on the other side, did not accept this reasoning line.



By Peixoto (1938), first, was fundamental that if threw down and unmasked the thesis deterministic and if built a land and man analysis new perspective of the tropics. In the whole his work evidences defense's possibilitism thesis enormous effort, demonstrating that, in reality, the climatic influences generated adaptations and new arrangements in the relation society-nature.

But, besides the speech in the field of the philosophical ideas, that Afrânio Peixoto was building by more than three decades, dedicating to the environment influences in the societies behavior, this author also had interest, and too much, by the aspects of climatic order, to such an extent that, leaving aside his academic formation in the medicine field, he thoroughly dived in the theoretical and methodological discussion of the Climatology arriving, inclusive, to present a critical evaluation of the scientific production of this knowledge area.

In "Climate and Health", Peixoto (1938) accomplished an excellent analysis of the climatic terms associated to the illnesses and public health, demonstrating that more than climate influences, are hygiene and wholesomeness conditions, therefore, socioeconomic aspects, that proceed to define new endemic areas. Dismounting the ideas pre-concepts on "tropical diseases", author argues:

"Climatic diseases were formerly cholera, malaria, and sleep disease: today they have a well-known etiology, without no subordination to the climate; invade places on all the latitudes; In the zones of a same climate, they have been retreating ahead from that whose hygiene has them been known how to preserve. And this true so simple, and of such great consequences - because territorial and economic conquest of the world there is, - that does not exist climatic diseases - therefore does not exist tropical diseases - imposes, replacing old beliefs for this other scientific by the observation and by the experience: just there are avoidable diseases, against which ones the hygiene has safe means of defense and reaction".

In this same work, the author analyzed the questions on "Meteoropathology", relating climate kinds and its seasonal variations, with the morbidity, epidemics and endemics cases. He concluded that, starting from some climatic conditions, some pathology are facilitated and another inhibited, however, once detected and diagnosed, many just let there being. They can, however, reappear in other climatic environments, due to the hygiene and health conditions.

Retaking his interest by the more particular matters of the Climatology, Peixoto (1908), when proposing a new climatic classification for Brazil; he considered three climatic types, as well as Morize and Delgado de Carvalho, however, on the other side of the other two, emphasized tropicality character of our territory. Peixoto climatic classification, firstly published in 1908, and lightly modified in 1938 and 1942, it is thus structured:

Climates	Types (Generals)	Region
Equatorial	Hot and Wet	High Amazonas
	Hot and Sub-Wet	Countryside of the States of North, Northeast and Center-West (PA, MA, MT)
	Sub-Hot and Wet	Coast of the State of North and Northeast
Tropical	Coastland	Littoral of BA and SE
	Coastland Hot and Wet	Littoral of BA, ES and RJ
	Continental	Paraguay Valley (MT/MS)
	Altitude	Region Heights of BA, MG, ES, RJ e SP
Tempered	Coastland	Littoral of SP, PR, SC e RS
	Continental and Altitude	Stats of SP, PR, SC e RS

Source: Santana Neto, 1998.

The main differences among Henrique Morize, Delagado de Carvalho and Afrânio Peixoto classifications refer to much more to the delimitation question of the tropical zone than to the geographical and meteorological elements considered in the climates space distribution proposal.

If on one side, Draenert, Morize and Delgado de Carvalho were responsible persons for the first more systematic studies of the Brazilian climatology in passing of the centuries XIX to XX, on the other hand, fell to Afrânio Peixoto, in these history first pages of this wonderful science, the establishment of a procedures set of more conjunctive and humanistic analysis. In a way, he introduced a new paradigm for the geographical studies of the climate in Brazil.

After 40 years of important services to the new generation formation of its country Afrânio Peixoto retired. He died in the Rio de Janeiro city on January 12nd, 1947, with 70 years old.

By all that was described here we show that contribution of Afrânio Peixoto was essential by Biometeorology or Meteoropathology in Brazil.



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Ultraviolet Radiation Index and Health: You owe Protect!



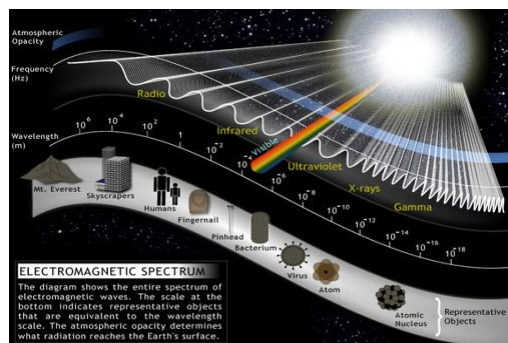
Would you know how to tell which ones the dangers to the if do expose daily in the sun? Had which are the effects cause by ultraviolet solar radiation to our skin and to our eyes? It was to answer these and other questions that we elaborate this matter so that you can have useful information to interpret and to use UVI for your protection. Moreover, you will have material about UV radiation effects on human health, as you protect, besides other subjects as artificial tanning and sun block.

What is Ultraviolet Radiation?

The Sun, the biggest nature radiation source, emits energy through a wavelength wide band (electromagnetic spectrum). The wavelength is measured by distance among propagation waves crests. How much smaller the wave length, larger the energy intrinsic quantity, that can be translated in penetration larger capacity.

The Ultraviolet Radiation (R-UV) is a small part of this radiation emitted by the sun. It just corresponds 7% from the total emitted by sun (between 100nm and 400nm), but we do not let deceive by numbers, because even in small quantities affects strongly the biological systems (plants and animals) and, thence, has fundamental great in the health, comfort and life quality of people.

Part of the ultraviolet radiation originating of the sun is absorbed by atmosphere, more specifically by ozone layer and the ultraviolet name is due to the fact of this radiation kind be next to the ghastrly band of the radiation by violet color, but, actually, is invisible to the human eyes.



And, being invisible, are many times carried to think we are not being exposed to it, when actually it is present in great intensities in the largest part of the day, over all in situated regions near to the tropics as Brazil's Case.

Types of Ultraviolet Radiation

The band of the electromagnetic spectrum that comprehends UV-R is subdivided in three different kinds: UVA, UVB and UVC. This differentiation gives regarding the wavelength band, being UVC with length of short wave and UVA with length of long wave.

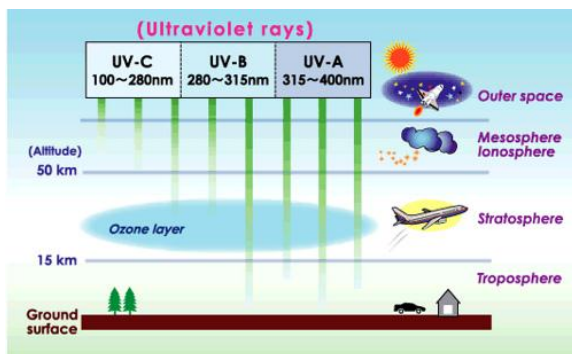
We will know a little more about each type of UV radiation.

UVA Radiation (wavelength between 315 and 400 nm). The atmosphere is very permeable to this radiation band. This way, good part of the UVA radiation that reaches to superior layer of the atmosphere gets crosses it with little decrease. It is very little absorbed by ozone layer. It penetrates deeply in the skin layers causing damages to our health.

UVB Radiation (wavelength between 280 and 315 nm). The ozone layer absorbs good part of the UVB radiation that arrives to earth. Even in small quantities can be substantially harmful to the health. It does not penetrate so deeply in the skin regarding to the UVA radiation.

UVC Radiation (wavelength between 100 and 280 nm). It is totally absorbed by ozone layer and isn't reason of still preoccupation. It is highly penetrant and harmful to the health, and we would have serious problems if reached to terrestrial surface.

The illustration below allows to observe the intensity with which UVA, UVB and UVC radiations reach to surface of our Planet.



Equipment for UV Radiation Measurement

There are two forms of if determine Ultraviolet Radiation (UV-R) level of that arrives to the earth surface.

The first uses instruments installed in the soil that measure directly UV-R quantity that is reaching earth surface. This mensuration kind informs us on UV-R quantity in a certain place. The number of instruments installed in the soil is limited not only by cost, but by access difficulty to many place in the globe and because UV-R quantity can vary a lot of a location by another. Various different instruments are available for R-UV direct mensuration, such as spectrophotometer, biometer, radiometer, among another.

The second form of measuring UV-R levels that reach the earth surface is through estimate with base in the ozone mensuration and of the cloud coverage, among other parameters, accomplished by satellites.

The choice of which mensuration instrument use will depend, mostly, of the application that obtained information will have: Research, monitoring, divulging of UV index to the population, industry, etc.



Instruments of UV direct measurement.



Indirect forms of UV measurement.

What is Ultraviolet Index?

The Ultraviolet Index (UVI) was developed by American Meteorological Service (NWS) and by Environmental Protection Agency (EPA), both of United States in 1994.

UVI is a UV radiation intensity measure, important to the effects on human skin, reaching the surface of the earth. It represents the daily maximum value of the ultraviolet radiation. That is, at period regarding the solar noon, the maximum intensity horary of solar radiation.

As cloud coverage is something very dynamic and variable, UVI is always presented for a condition of clear sky. That is, for cloud absence that, in most cases, represents the radiation maximum intensity.

Actually is a simple form of quantify the intensity of ultraviolet radiation, avoiding the energy units employment, what could complicate its comprehension and to limit its use.

So, it facilitates that people through a number can plan their outdoors activities, of manner to avoid excessive exposure to the UV radiation and, consequently, decrease the risks of suffering their novice effects.

To quantify this intensity, it was adopted a scale of entire numbers for the UV index variable from 1 to 15, being **indicative smaller values of low intensity and larger values for high intensities.**

According to World Health Organization (WHO) recommendations, these values are grouped in intensity categories, as shows the table below.

CLASS	ULTRAVIOLET INDEX
LOW	< 2
MODERATE	3 a 5
HIGH	6 a 7
VERY HIGH	8 a 10
EXTREME	> 11

But, Why to Create an UV INDEX?

We know that each person owns a kind of different skin and in sight of this has distinct sensibility. A Negro, for example, can get more time exposed in the sun without running risks than a person of clear skin.

We can imagine the intensity as if went radiation doses. Thus, different people (kinds of skin) must expose to these doses by a time period, otherwise run the risk of have serious problems of health.

Because of this, the most correct form to speak on UV index is associate it to its specific type of skin and, from there onwards, checks which quantity of "safe" time that you can to expose in the sun without running risks of suffering burns or more serious lesions.

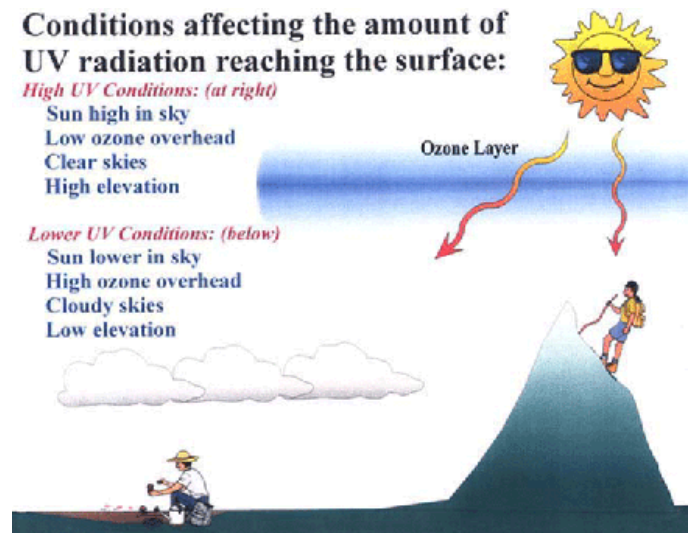
Therefore, the UV index serves to alert about the need to protect us to execute outdoors habitual activities, since excessive exposure owns ranks varied of risks, due to its effect in skin and in eyes.

Do you know how UVI is calculated?

The UV radiation levels that reach the earth surface can vary depending on several factors. Each one of the factors below can increase its risk of an excessive exposure and consequently affect its health. This way, they are essential for UVI Calculation.

- 🌐 **Stratospheric Ozone Layer:** Gas ozone concentration in the high atmosphere.
- 🌐 **Altitude:** In high altitudes are subject to doses more elevated of UV radiation.
- 🌐 **Time of Day:** From 10 a.m. and 4 p.m., when the sun is more 'high' in the sky, the UV radiation intensity is larger.
- 🌐 **Season:** Winter's days, the UV radiation is a little smaller compared to the summer's days.
- 🌐 **Surface or Soil Coverage:** Snow and sand reflect much radiation and can increase very to exposure to the UV rays.
- 🌐 **Cloudiness:** The clouds percolate part of the UV radiation, but must care us same in cloudy days.
- 🌐 **Geographical Location:** Tropical regions are subject to UV radiation doses very larger than tempered regions.

The illustration next show as each factor acts decreasing or increasing to UV radiation incidence.



Source: www.dermatology.cdlib.org.

For a same region, the factors that contribute to increase or to decrease the UV radiation incidence are basically **the time of day, season, cloudiness** and **surface type** (or soil).



IUV Calculation

All these characteristics mentioned before are carried in account as entrance parameters at computational model used to UVI Calculation. The spectral irradiances (energy quantity by area unit and by wavelength) are calculated from the entrance parameters: Ozone quantity (evaluated according to the surface level regarding the sea level), sun position, kind surface and clouds and aerosols coverage.

This spectral irradiance is pondered by answer of the human skin to the ultraviolet radiation, named Action Spectrum Erythemic. That spectrum corresponds to the biological "answer" of human skin to this kind of radiation. Once pondered, by irradiance - now called from Erythemal Irradiance - is integrated in the spectral interval between 280 and 400nm (UVB and UVA).

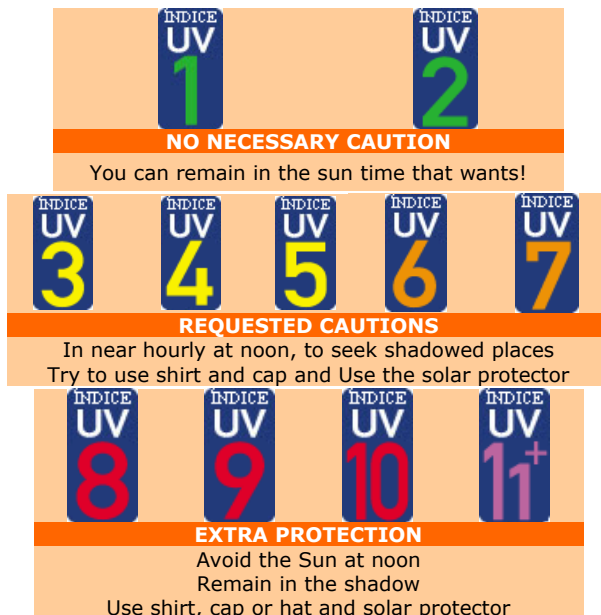
Mathematically has that:

$$IUV = C \int_{280nm}^{400nm} E_{\lambda} \epsilon_{\lambda} d\lambda$$

Where E_{λ} is spectral irradiance in the surface ($W/m^2/nm$), ϵ_{λ} is action spectrum Erythemal and **C** is the constant of equivalent conversion to $40 W/m^2$.

Thus, UVI nothing more belong than a format simplified by presentation of irradiance Erythemal. Each UVI unit corresponds to 25 mW/m² of energy.

Interpretation of the UVI Value



UV-R Effects on the Skin

The reactions of the human skin to the exposure to UV-R can be classified as acute (immediate) or chronic (long time). The acute reactions, like burnings, tan and production vitamin D, develop and disappear quickly; while the chronicles, like skin photo-aging and cancer, have gradual appearance and long time.

The difference between both reactions is due to, mostly, historical of person exposure and to the different wavelengths of UV-R, once that UVB-R is about 1,000 times more "aggressive" than UVA-R. This difference makes with that UVA-R have a contribution of only 15 to 20% in the responsible energy quantity by burning.

UV-R Effects on the Eyes

Of the same way that ultraviolet radiation can cause damages to the human skin, also can cause or to intensify problems and diseases on the eyes.

By and large, the excessive exposure to any type of radiation can carry to some type of prejudice to the eyes health. Table below presents, according to the radiation spectrum, a summary on these possible problems:

Spectrum	Affected Tissue	Absortion Place	Type of Damage
UVC/UVB	Cornea	Epithelium	Photochemical: Photoqueratite and córnea opacities.
UVB/UVA	Crystalline Lens	Nucleus	Photochemical: Catarata.
Visible	Retina	Epithelium pigmentary	Thermal: Vision decrease.
		Haemoglobin	Hemorrhage intraocular.
IRA	Retina	Pigment blemish	Changes in the color perception.
		Epithelium pigmentary	Thermal: Vision decrease.
IRB	Cristalline Lens	Epithelium	Catarata.
		Epithelium	Opacities.
IRC	Cornea	Epithelium	Superficial Burnings.

Source: Adapted of Vergaz, 2001.



Solar Protector

The current solar protectors are more resistant to the water and to the sweat. Should apply a generous quantity, 30 minutes before leaving home, and reapplies it to each 1 or 2 hours, mostly during sun peak horary and more frequently after swimming or exercise.

The protector should be used in all parts of the exposed skin in the sun, including ears, costa, shoulders, posterior regions of the knees and legs.

We have to have in mind that the solar protectors do not serve so that you 'be more time in the sun'. Use it as protection agent and always avoids exposing at the Sun excessively. It is important to use, besides solar protector, other protection options: t-shirts, hats and to seek for shadow.

What is SPF?

SPF is the acronym for "Sun Protection Factor". It indicates how long you can get safely exposed at the sun, regarding the case of do not use any kind of protection. That is, if SPF is equal to 8 means that using product correctly you can expose a period of 8 times longer than if did not use any protection.

Studies show that generally people do not apply correctly the solar protectors. Do not forget: The minimum factor of adequate protection is SPF 15 where should be applied generously 30 minutes before exposure at the Sun. The product should be reapplied every two hours.

Artificial Tanning

UVA radiation (UVA-R) can penetrate in more deep layers of the skin, causing direct damages to the blood vessels, reducing the skin elasticity and of the collagen. So, UVA-R is main responsible by premature aging of the skin, causing laxity, wrinkles and stains.

Moreover, also can cause cornea inflammations and retina damages, decrease number of immunological cells of the organism and, according to some studies, also can cause skin cancer.

The tanning chambers are a source of UVA-R more powerful than the sun, intensifying harmful effects caused by that type of radiation. Thus, the best form of protect us, and do not spend money, is to avoid that tanning type and to follow advices of the sun protection.

Myths & Facts

MYTH	The tan by the sun is healthy. Tanning you are protected of the harmful effects of the sun	FACT	The tanning corresponds to a defense's skin mechanism against the ultraviolet rays. Any change in the skin color is a damage signal
MYTH	You does not suffer solar burn in cloudy days	FACT	The solar burn is possible in cloudy days. About 80% of the ultraviolet radiation can penetrate through clouds little dense
MYTH	The ultraviolet radiation in the winter is not important	FACT	The intensity of the ultraviolet radiation in the winter is little minor, however is enough to cause serious damages to the skin
MYTH	The solar protector protects you so much that you can take sun-bath by more time	FACT	The solar protector should not be used to increase time of exposure at the sun, but to increase the protection for an inevitable exposure
MYTH	If you do intervals during the sun-bath, you will not suffer burns	FACT	The exposure to the ultraviolet radiation has an accumulative effect
MYTH	If you do not feel the hot sunbeams, you will not suffer solar burn	FACT	The solar burn is caused by ultraviolet rays, that cannot be felt. The heat sensation is caused by infrared rays
MYTH	The skin cancer only occurs in the parts of the body that are continually exposed at the sun	FACT	The melanoma generally occurs in the back (man) and legs (women) that are exposed local intermittently at the sun
MYTH	The skin cancer only happens in people with very clear skin	FACT	The skin cancer commonly occurs in people who tan before burning

If you want to know more (in Portuguese):

CPTEC/INPE. Radiação Solar, Camada de Ozônio e Saúde Humana. <http://satelite.cptec.inpe.br/uv/>.

Programa Sol Amigo. Programa de educação continuada em saúde, que tem como objetivo ensinar as pessoas a se protegerem adequadamente da exposição excessiva ao sol <http://solamigo.com.br>.

LEPA/DMET/IGEO/UFRJ. Página sobre Radiação UV da Universidade Federal do Rio de Janeiro <http://www.indiceuv.ufrj.br>.

SBD. Portal da Sociedade Brasileira de Dermatologia o Índice Ultravioleta e a Prevenção do Câncer de Pele. <http://www.sbd.org.br/campanha/cancer/ultravioleta.asp>

Laboratório de Ozônio/INPE. Página que apresenta estudos da Camada de Ozônio e da radiação Ultravioleta. <http://www.dge.inpe.br/ozonio>.

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CORRÊA, M. P., 2003. **Índice Ultravioleta: Avaliações e Aplicações.** São Paulo, 247p. Tese (Doutorado em Ciências), DCA/IAG/USP. Link: http://satelite.cptec.inpe.br/uv/documentos/Tese_mpcorr_ea.pdf.

Bachirellato Course in Meteorology of Federal University of Santa Maria



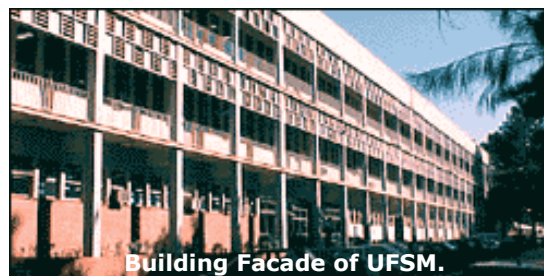
UFSM
Universidade Federal de Santa Maria



The Natural and Exact Sciences Center - CCNE is integrated into eight Units of the Federal University of Santa Maria (UFSM) having six departments, eight graduation and seven post-graduation courses. CCNE is as mission to prioritize research and knowledge by disseminating knowledge and encouraging to the initiative for then build and transform reality.

With reorganization plane of the Federal University of Santa Maria, in 1970 the Basic Studies Center was created, which included the Natural and Exact Sciences area, with courses in Physics, Chemistry, Mathematics and Natural History.

The current structure of CCNE was regulated at 10 January 1983 and subdivided the Center in six departments: Biology, Statistics, Physics, Geosciences, Chemistry and Mathematics.



The Beginning

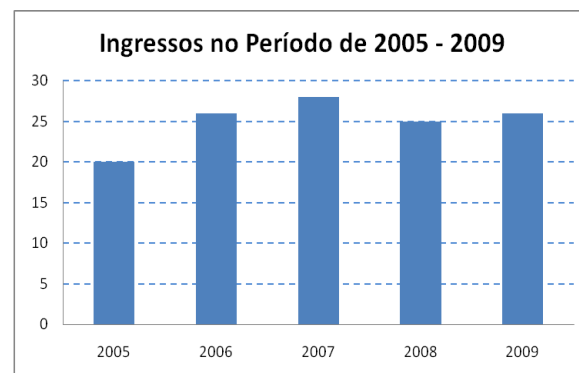
The Meteorology course of UFSM was created in 2004 and the first entrance exam was conducted in 2005, when 20 places for daytime had been offered. Became thus the seventh course of Meteorology in Brazil where nowadays there are eight effective courses.

It can be said that at UFSM occurred reverse of what generally occurs in the universities, because first appeared the master and doctorate courses in the Micrometeorology area linked to the physics course, and only later was created graduation in Meteorology.

The appearance of the course was mainly based by the justification that, still today, there is an increasing demand for meteorologists, which combined with expansion of their actuation fields and low number of graduated professionals each year in Brazil, about 40, clearly showed that demand was not

accompanied by an increased supply of professionals in the market.

Since 2005 is noticed that the number of students entering in the course has remained around 25 per year. Eights professionals were formed in 2008 and two in 2009.





The Student Learning

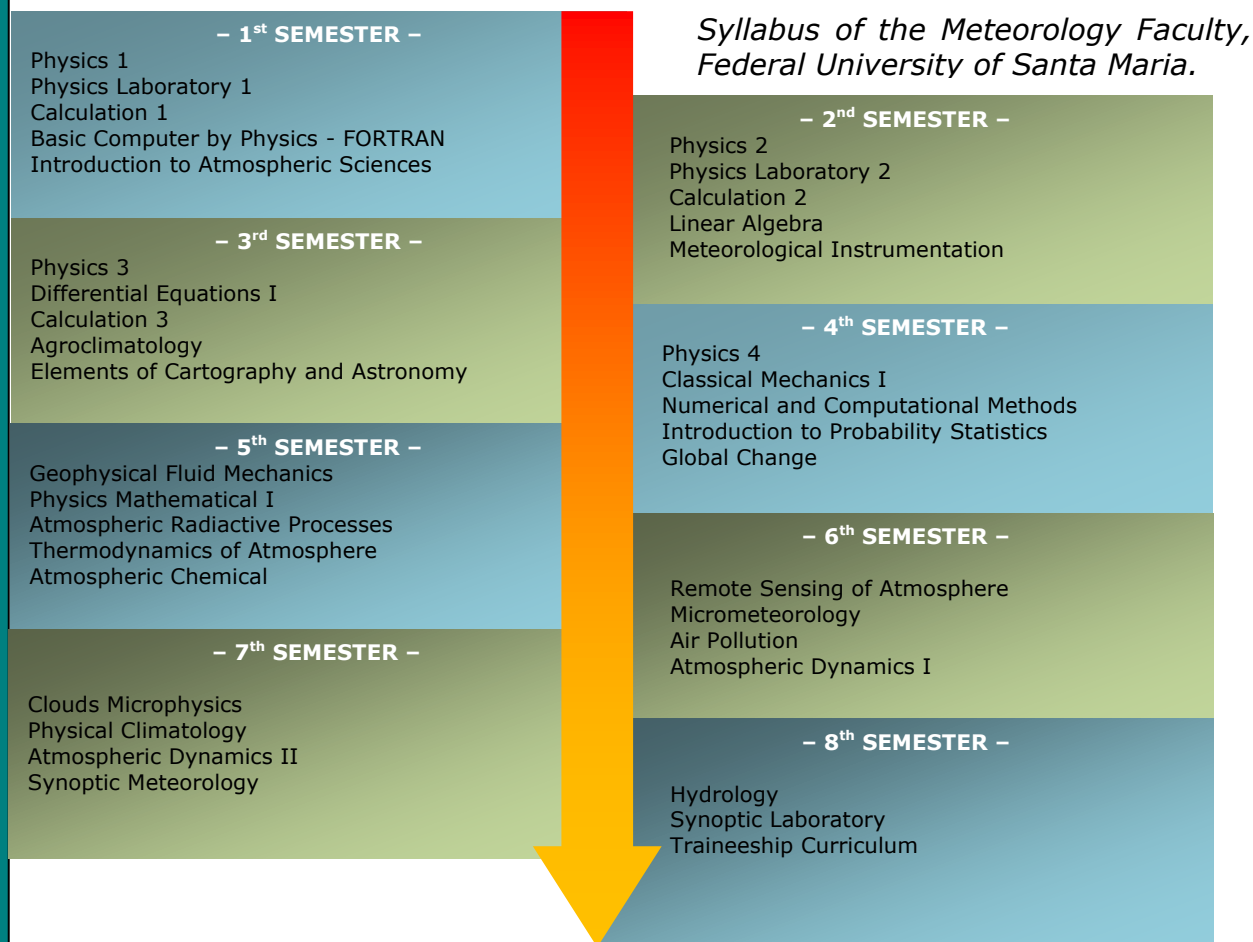
Joined to the academic experience of the Micrometeorology group of the Physics Faculty with one the Agrometeorology of the Fitotecnic Department. Besides the understanding that is increasingly important to overall knowledge of the interactions between humanity and environment, which allows managing natural resources responsibly and promoting sustainable development.

The course structured a study program focused on training professionals critically, able to interpret laws that govern the atmospheric movements and apply them in the description and prediction of weather and climate processes.

It was designed with a total workload of 3,330 hours composed for obli-

gator classrooms that make up the fixed part of the course and elective classrooms that comprise the flexible part. The basic cycle is designed for consistent training of students in mathematics and physics

The fixed part has 2,370 hours and 960 hours flexible. To fulfill the totality of the fixed part, the student will have that to carry at last year's graduation a traineeship lasting 90 hours. The training aims to familiarize students with modern techniques used by meteorologists in different application areas: Weather Forecasting, Mathematical Modeling of Air Pollution, Climate Prediction, Global Climate Change, etc. The internship will be supervised by a professor of the course and will be evaluated by the report and its public defense.



Staff

The professorate of the Meteorology Course is composed by professors of Physics and Mathematics courses beyond of professors of the proper department.

Professors

Dra. Damaris Kirsch Pinheiro
Dra. Debora Regina Roberti
Dr. Osmar Francisco Giuliani
Dr. Gervasio Annes Degrazia
Dr. Luiz Alexandre Schuch
Dr. Marcos Andre Carara
Dr. Mauricio Fronza da Silva
Dr. Nereu Augusto Streck
Dr. Osmar Francisco Giuliani
Dr. Otavio Costa Acevedo
Dra Simone Eroltildes Teleginski

Research Laboratories



The Micrometeorology Laboratory of UFSM acts in the areas of theoretical modeling of turbulent phenomena and its experimental observation. It comprises a team of six teachers and several students of Post-Graduate.

From a theoretical standpoint, the greatest interest is the development of parameterizations for the turbulent transport in different atmospheric dispersion models, taking into account the effects of mechanical and thermal forcing. The group is also dedicated to the study of decay processes of well developed turbulence in the absence of the forcing that originate it.

The group has extensive experience in observing missions that aim to understand the species and energy transfers between the surface and atmosphere in different ecosystems.



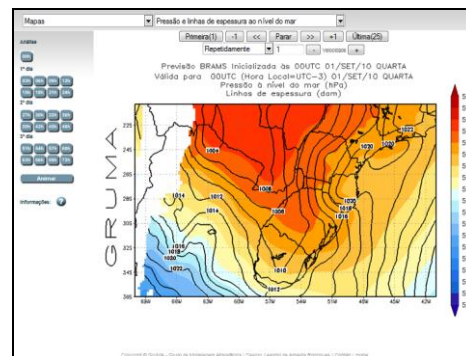
3D Sonic Anemometer.

The studies are developed as a result of consolidated cooperation with national and international groups of research.



Atmospheric Modeling Group of Santa Maria - GruMA is headquartered in the dependences of the South Regional Center for Space Research (CRS - INPE) located at UFSM.

For the development of computational modeling this group also uses a Cluster and has the support of six professors and graduates and Post-Graduate students.



Visualization of pressure at sea level and thickness fields of the BRAMS model available in the GruMA Website.

Thanks:

We appreciate the cooperation of Mr. Frank Leonardo Casado, Institutional Researcher of UFSM.

Sources:

- Santa Maria Daily publish on August 10 2004, www.clicrbs.com.br/dsm/rs.
- <http://pc16.lacesm.ufsm.br/meteorologia/>
- <http://www.gruma.ufsm.br/lumet/>
- <http://www.gruma.ufsm.br/gruma/>
- And institutional documents gotten in Internet.

A Silence in the Astronomical and Meteorological promotion in Brazil



The Brazilian science is in mourning with deeply lamentable news of the death victim of a cerebral vascular accident (AVC) 28 July at 10h00min in Rio de Janeiro of our dear friend "Marcometa" and "Marcomedia" **Marcomede Rangel Nunes**.

He was born in Rio de Janeiro in 1951, in São Cristóvão, even district of the National Observatory (ON). The interest by sky came early. The mother, descendant of Indian, told like guided them by the stars. At eight old did a "telescope" of cardboard and charged to show the Moon his friends. 14 years old, always hit the door of the National Observatory and requested to see the telescopes. Until that a day let him. At the 17 age, he had begun to work there like aspirant, studying the Sun in 1968. He was contracted in 1976 by CNPq/ON, later statuary of CNPq and since 2000 of the Science and Technology Ministry (MCT). Worked on the departments of Astronomy (asteroid, comets and double stars), Geophysics (Gravimetric) and Hour Service of the National Observatory. Before his death was Scientific ON Director.

Marcomede name have appeared since the first astronomical observation bulletins of the National Observatory, in 1969.

Marcomede began his superior studies in Meteorology in UFRJ (1974-75), but he transferred to the Physics course of Humanities

Faculty Pedro II (FAHUPE), where he graduated at Physics in 1980. Soon after he specialized in Journalism at Estácio de Sá University (UESA) in 1983. He had Master in Brazilian Studies (Social Sciences) by State University of Rio de Janeiro - UERJ (1989), with theme: "About Brazilian Scientific Participation in Antarctic".

He was member founder of History of Science Brazilian Society - SBHC (1985). Press Brazilian Association Member (ABI); Member of Literature and Arts National Academy (ANLA). In 1980' was coordinator of the Solar Section of Astronomy Brazilian Union, even being in the National Observatory.

He became, 1984, first Brazilian to measure solar radiation in the Antarctic. He accomplished various voyages to the Antarctic continent by the Brazilian Antarctic Program - PROANTAR/SECIRM.



He helped to build observatories, planetariums and sundials, among them City Park (5.5 m height), in Brasília, with Oscar Niemeyer.



"MARCOMETA" AND "MARCOMEDIA"

Who did not know him, we can introduce him calling "Marcometa". He was firstly called out this way because during Halley Comet passage by Earth in 1980's, Marcomede catalyzed great interest by the astronomy.

He exited by Brazil encouraging sky observation sessions, publishing pamphlets and opening space so that lots of amateur astronomers went carried, with their telescopes, by small cities to show the sky for people's hundreds. In other words, he did so much bustle to announce the astronomy that the cartoonist Ziraldo nicknamed him of "Marcometa".



Illustration: Gerson Conforto.

He actively assisted museums creation: Astronomy and Similar Sciences (1985), through Memory and Divulging Group - GMD (1982); Science History Nucleus - NHC (1983) and Astronomy Memory and Similar Sciences Project, aiming create "Museum of the National Observatory"; and Eclipse (1999), in Sobral city (Ceará State).

He took part of the implantation of planetariums in Belém/Pará (1999) and Feira de Santana/Bahia. Moreover, accomplished astronomy projects inside schools Fernandes da Costa Domingos (ON Astronomer) and Sodré da Gama (Planetarium of Belém).

He was Science and Technology Analyst of National Observatory. He had vast experience at the research area of the Science and Technique History. He advised construction projects of observatories and planetariums.

Also he kept narrow contact with political to search of public recognition by work of scientific promotion accomplished by amateurs and volunteers.

Along his life received several Awards: Merit Tamandaré and Navy Friend (both Brazil Navy by performance diffusion work of Brazil in the Antarctic); Medal Tiradentes (ALERJ, 2007); Medal Pedro Ernesto (CMRJ, 2000); Medal Guimarães Rosa (ABRADE, 2009, by culture and environment) and Meritorious Commander by the Visconde Mauá Memorial Society (2009).

Latter on Comet passage, he proceeded being called "Marcomedia", because established connections with journalists and reporters, publishing in newspapers, magazines and TV. He traveled by Brazil supporting and encouraging the amateur associations and always was of arms opened at National Observatory (ON) to receive and to show the campus to all visitors.

Afterward this excitement and scientific divulging intense trace of Astronomy in media popped by country clubs of astronomers' amateur, telescopes and observatories.

Além disso, assinava várias colunas de ciências para jovens em jornais e revistas, dentre elas sobre Meteorologia e sua importância para as pessoas. Por tudo isso, seus Colegas o chamavam de "Marcomídia".



Scientific Awakening for Children



Photo: Basílo Fernandez.

Scientific promotion for children was in fact his passion. He did lectures at schools and marked visits to the National Observatory, where was scientific director and worked 42 years ago. It loved to carry Astronomy to the children running through Brazil infatuated.

He always was ravished with young people and children influx for sciences and happily mentions "By the curiosity is that is that are awoken by formation in the science".



Marcomede talking for students from Sacramentinas School at Knowledge Park Museum in Feira de Santana/BA. Photo: Basílo Fernandez.

His passion by astronomy carried him, early to the scientific divulging, starting to write regularly in the newspapers of larger Brazil's Circulation (*Jornal do Brasil*, *O Globo*, *Folha de São Paulo*) and in several magazines, as well as on radio and television, guiding, mostly the children.

He loved so much to do it that was very common to see him surrounded of children, explaining the Sun physics mysteries, or carrying them to visit the National Observatory, clarifying the hour preservation complicated mechanisms. At that time of Comet Halley (1986) made a guidebook contend excellent and beautiful storiottes (comic strip).

Extrovert, shaken and of simple manners, Marcomede was always at ease to talk about astronomy, valorize amateurs' determination and to encourage the associations creation and studies groups. He also was plastic artist and painted abstract pictures. Due his brilliant multiple activities he was known as Physicist, Professor, Amateur Astronomer, Painter, Writer, Divulger...

Marcomede was one of the first professional to announce Meteorology in our country. Moreover, he was collaborator of the Meteorology National Institute (INMET) in several occasions, inclusive to compose the 100 year history of INMET.

He owned more than 30 papers published between books and pamphlets of scientific promotion, besides charts and collaborations for magazines and newspapers. Author of the books: "Santos Dummont: Um Astrônomo Amador", "Uma Luz Diferente no Céu: O Cometa Halley", "A Pedra do Bendegó, que Veio do Céu" (1990) and "Antártica: Uma Viagem ao Topo do Mundo" (2005). He also had books texts published with Darcy Ribeiro and João Saldanha.

Marcomede died at the age of 59 leaving widow, three sons and lots of friends in the firmament. He was an example by his fabulous dedication to do arrive to children and young people Astronomy, Meteorology and valorization of our planet and nature.

This way, all the Brazilian science lovers feel the silence of a rare happiness and enthusiasm voice by Astronomy and Meteorology. That the stellar skies can hug and to welcome this formidable person, that always illuminated and announced our skies with great scientific atmosphere.

He lets us the challenge of continuing announcing and showing the Astronomy and Meteorology firmament for the all people.

UNEMET Team.



Releases

CLIMATE AND DISEASES OF BRAZIL: OR MEDICAL STATISTICS OF THIS EMPIRE

Published by Fiocruz
JOSEPH FRANÇOIS XAVIER SIGAUD



The book, recently released by Fiocruz, was originally published in Paris in 1844, and translated in the 1990s by Renato Aguiar. The publication, promoted by the celebrations of the French Year in Brazil in 2009, addresses the state of the art of Brazilian medical situation, bringing broad description institutional, social, topographical and bibliographical.

The responsible editors and authors invite the reader to participate in fruitful dialogue that keeps this area from Clio to surrounding areas of humanities and with different natural sciences, each time more sensitive to historical analysis. José Francisco Xavier Sigaud thus establishes the game rules in the introduction to his book

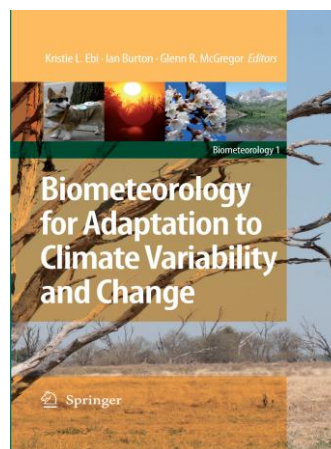
Treat will be here, he says, so only climate and medicine. And yet, it is many other things, all passionate, all relevant ones. Of the Climate, certainly, since this makes up the title of this huge workmanship; of the illness, evident; of statistics (which will return).

This book *Climate and Diseases of Brazil* posses 424 pages and costs R\$ 70.00 in Livraria Cultura.

Further information in
<http://www.livrariacultura.com.br>.

BIOMETEOROLOGY FOR ADAPTATION TO CLIMATE VARIABILITY AND CHANGE

Published by Springer
Kristie L. Ebi (Editor)



Biometeorology has long been considered an afterthought and so walked off the media, although their studies are concerned with describing and understanding the impacts of weather and climate on humans and their activities and the natural (biosphere) system. The driving force is that biometeorologists are faced with a common problem – how best to provide advice on how to adapt to or cope with climate change.

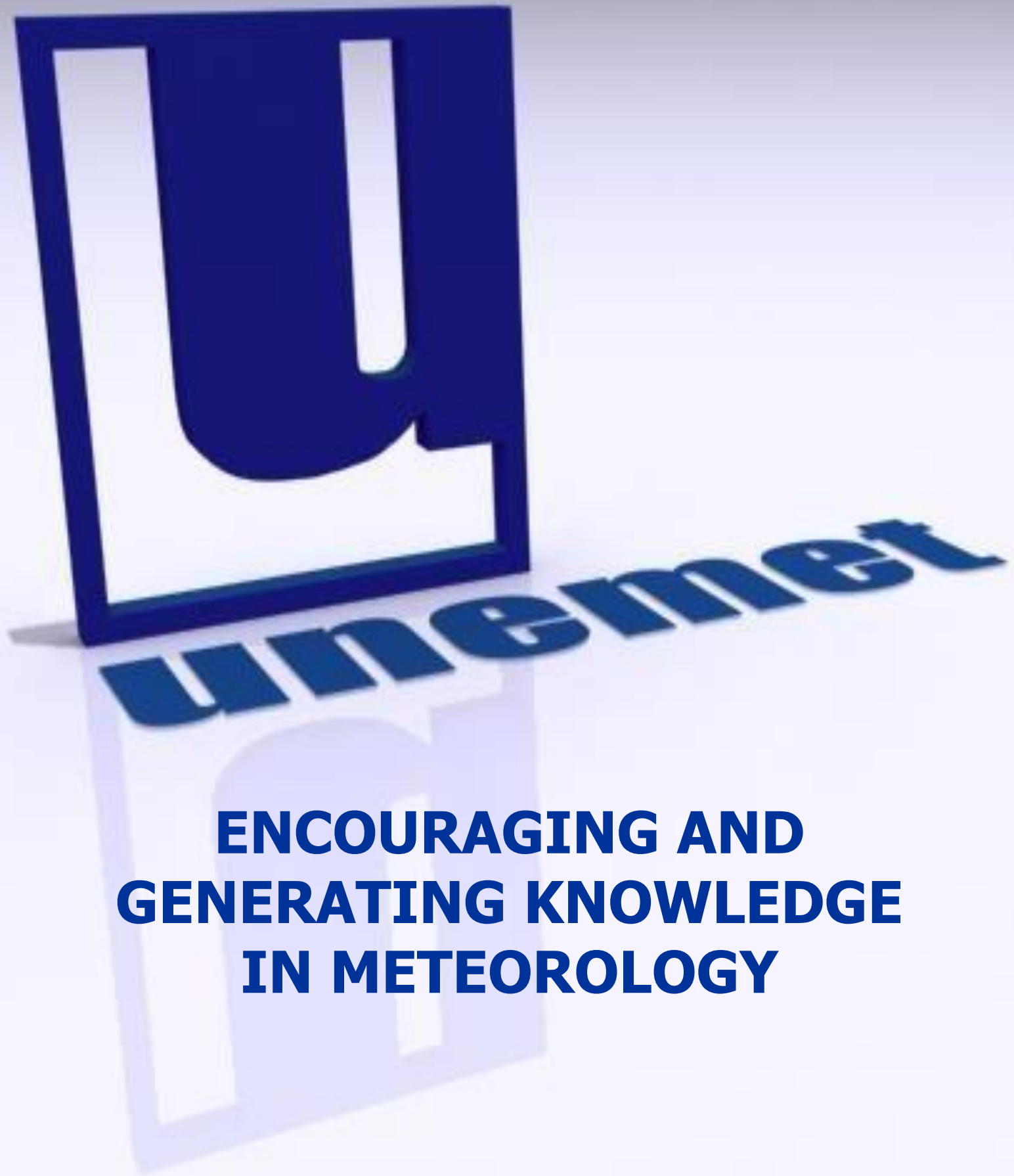
Thus, adaptation is a cross cutting theme, their studies clearly has something to contribute to the wider agenda of managing the impacts of climate change.

In this book, the papers are concentrated in two major fields. In the human study field, highlight themes on thermal comfort and ergonomic environments in outside jobs. In field of ecosystem studies, the focus is on nature answer due to climate change.

Studies dating since Glacial Age and colonization at the time until research on warming mitigation of urban islands. Applied biometeorologists have focused on how best to prepare for and cope with weather and climate abnormalities.

The book has 284 pages and costs US\$ 137.00 in Amazon.com.

Other information in:
<http://www.springer.com>



**ENCOURAGING AND
GENERATING KNOWLEDGE
IN METEOROLOGY**